Horizon Power

283- West Kimberley Solar
Flora and fauna assessment

July 2021

Executive summary

Horizon Power is proposing to install centralised solar generation at Ardyaloon, Beagle Bay, Bidyadanga and Djarindjin communities in the West Kimberley, Western Australia. GHD was commissioned by Horizon Power to undertake a detailed and targeted flora and vegetation survey and basic and targeted fauna survey within the four separate development (project) areas. The four project areas are located within the West Kimberley bioregion. The total area is approximately 27.4 ha. The survey was undertaken from 1 - 5 March 2021. The outcomes of the assessment will be used to inform the project design and provide information to support a native vegetation clearing permit application under Part V of the *Environmental Protection Act 1986*.

Key findings

Flora and vegetation

Three vegetation types aligning with broad landforms were identified and described in the project areas, not including cleared tracks. The vegetation has been mapped as: *Eucalyptus miniata* and *Corymbia greeniana* woodland to isolated clumps of trees on Pindan red sand loam on low plain (VT01), *Corymbia greeniana* and *Corymbia bella* isolated clumps of trees over *Melaleuca nervosa* subsp *crosslandiana* open woodland on silty loam over clay on drainage flats/floodplain (VT02), and *Corymbia hamersleyana* and *Corymbia flavescens* open woodland on red brown sandplain (VT03).

No TEC's listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or *Biodiversity Conservation Act 2016* (BC Act) were identified within the project areas during the field survey. VT02 within the Beagle Bay project area represents the PEC Kimberley Vegetation Association 67, with this pre-European association previously mapped within the project area. VT02 is analogous with the Vegetation Association based on species present, type and landform.

The condition of the vegetation within the survey area ranged from Excellent to Good. The vegetation structure was intact with limited signs of cattle activity and a low number of introduced flora were recorded for most of the project areas except Bidyadanga, where higher introduced species cover was recorded and previous disturbance.

One hundred and thirty-seven flora taxa (including subspecies and varieties) representing 38 families and 90 genera were recorded from the survey area during the field survey. This total comprised 128 native taxa and nine introduced flora taxa. None of the nine introduced/naturalised flora taxa identified during the survey are listed as a Declared Pest under the *Biosecurity and Management Act 2007* or a Weed of National Significance.

No EPBC Act or BC Act listed flora were recorded from the project areas. A tentative record of the Priority three (P3) taxa *Triodia ?acutispicula* was recorded within the Ardyaloon project area within VT01. This taxon could not be confidently confirmed as no fruiting material was available to correctly separate this species from other similar *Triodia* taxa, so the precautionary principle was applied given the nearby records of *Triodia acutispicula*. This species was recorded with a cover of 20%. The Priority three taxa *Tephrosia andrewii* was recorded within the Bidyadanga project area. A total of two individuals were recorded from one location.

Fauna

Three broad fauna habitat types were described and mapped during the field survey. These comprise *Eucalyptus* and *Corymbia* on Pindan red sand, *Corymbia* over *Melaleuca* on silty loam over clay on drainage flats/floodplain and *Corymbia* over *Acacia* over tussock grasses over

hummock grassland on red brown sandplain. These fauna habitats align with the mapped vegetation types.

A total of 47 fauna species were recorded within the survey area, including 33 birds, five mammals and nine reptiles. No conservation listed species were recorded during the survey. No evidence of Greater Bilby activity (footprints, foraging holes, burrows of scat) was recorded within the project areas.

Of the identified conservation listed fauna species for the project areas the following species are considered likely to occur:

- Ardyaloon – Gouldian Finch (*Erythrura gouldiae*) (P4), Peregrine Falcon (*Falco peregrinus*) (S), Dampierland Burrowing snake (*Simoselaps minimus*) (P2), Dampierland plain slider (*Lerista separanda)* (P2) and Greater Bilby (*Macrotis lagotis*) (V)
- Beagle Bay – Gouldian Finch (*Erythrura gouldiae*) (P4), Peregrine Falcon (*Falco peregrinus*) (S), and Greater Bilby (*Macrotis lagotis*) (V)
- Djarindjijn – Gouldian Finch (*Erythrura gouldiae*) (P4), Peregrine Falcon (*Falco peregrinus*) (S), Dampierland Burrowing snake (*Simoselaps minimus*) (P4), Dampierland plain slider (*Lerista separanda)* (P2) and Greater Bilby (*Macrotis lagotis*) (V)
- Bidyadanga – no conservation listed fauna species are considered likely to occur.

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1. Introduction

1.1 Background

Horizon Power is proposing to install centralised solar generation for the following communities in the West Kimberley, Western Australia (WA):

- Ardyaloon
- Beagle Bay
- Bidyadanga
- Djarindjin.

Construction of the centralised solar generation will require the clearing of native vegetation for the required construction footprint and any related activities including fire breaks. The clearing footprint will be required to remain clear of vegetation for the duration of the operational life of the projects. Any surplus laydown areas or access tracks may be allowed to re-vegetate following the successful commissioning of the solar generation.

1.2 Purpose of this report

GHD Pty Ltd (GHD) was commissioned by Horizon Power to undertake a detailed and targeted flora and vegetation survey and a basic and targeted fauna survey for four separate development (project) areas at Ardyaloon, Beagle Bay, Bidyadanga and Djarindjin to support the environmental assessment and approval process. The purpose of the assessment is to define sensitive environmental values, in particular their spatial location and conservation significance, so the impacts of the proposed works can be managed to inform subsequent approvals and works to be undertaken. The outcomes of the assessment will be used to inform the project design and provide information to support a native vegetation clearing permit application under Part V of the *Environmental Protection Act 1986* (EP Act).

1.3 Location

The four project areas are located within the West Kimberley bioregion. The total area is approximately 24.84 hectares (ha) within the following land parcels:

- Ardyaloon - Part Reserve 20927 (being part of Lot 89 on Plan 91011, C/T: LR3128/867), area: 8.1 ha
- Beagle Bay - Part Reserve 1834 (being part of Lot 246 on Plan 91725, C/T: LR3055/241), area: 8.2 ha
- Bidyadanga - Part Reserve 9697 (being Lot 500 on Plan 52629, C/T: LR3139/426), area: 2.04 Ha
- Djarindjin - Part Crown Lease I26915 (being part of Lot 297 on Plan 93256, C/T: LR3123/260), area: 6.5 Ha.

The locations of each of the four areas is shown on Figure 1, Appendix A.

A desktop study area (study area) was defined for the desktop based searches of the assessment and includes a 20 km buffer of each of the four project areas.

1.4 Scope of works

The scope of works include:

- A desktop assessment of relevant literature, databases and spatial datasets to determine the environmental values that may be present within or in close proximity to the four project areas
- A detailed and targeted flora and vegetation survey
- A basic and targeted fauna survey
- A concise technical report (this document) outlining the method and compiling the results of the assessment

1.5 Relevant legislation and background information

An overview of key legislation and guidelines, conservation codes and background information relevant to this survey are provided in Appendix B.

1.6 Report limitations and assumptions

This report has been prepared by GHD for Horizon Power and may only be used and relied on by Horizon Power for the purpose agreed between GHD and the Horizon Power as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Horizon Power arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Horizon Power and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

This report has assessed desktop environmental aspects and biological factors in the field for the separate project areas. Should these areas change or be refined, further assessment may be required.

2. Methodology

2.1 Desktop assessment

A desktop assessment of the project areas to identify environmental values and constraints was undertaken by viewing geographic information system (GIS) spatial files largely sourced from Government of Western Australia (GoWA) (2021a) and reviewing publicly available, government managed databases. The information sources utilised in this assessment are presented in Table 1.

Table 1 Information sources

Aspect	Information source
Climate	Bureau of Meteorology (BoM) Climate Data Online (2021)
Geology, landforms and soil	1:500 000 State linear structures layer (DMIRS-015) Soil Landscape Mapping – Systems (DPIRD-064) (GoWA 2021a)
Acid Sulphate Soils (ASS)	Acid Sulfate Soil Risk Map, Kimberley Coastline (DWER-053) (GoWA 2021a)
Environmentally Sensitive Areas (ESAs)	Clearing Regulations - Environmentally Sensitive Areas (DWER-046) (GoWA 2021a)
Conservation reserves and areas	DBCA – Legislated Lands and Waters (DBCA-011) DBCA – Lands of Interest (DBCA-012) (GoWA 2021a)
Hydrology	Public Drinking Water Source Areas (DWER-033) RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037) RIWI Act, Groundwater Areas (DWER-034) RIWI Act, Rivers (DWER-036) Waterways Conservation Act Management Areas (DWER-072) Ramsar Sites (DBCA-010) Directory of Important Wetlands in Australia - Western Australia (DBCA-045) (GoWA 2021a)
Vegetation	Pre-European Vegetation (DPIRD-006) Native Vegetation Extent (DPIRD-005) (GoWA 2021a) Statewide Vegetation Statistics (GoWA 2021b)
Threatened and Priority Ecological Communities (TECs and PECs)	DBCA Threatened Ecological Community (TEC) and Priority Ecological Community (PEC) spatial dataset Priority Ecological Communities for Western Australia Version 28 (DBCA 2021a)
Conservation significant flora and fauna	DBCA NatureMap database (DBCA 2007–) DBCA Threatened and Priority Flora database (TPFL) WA Herbarium database (WAHERB) (DBCA 2021b, c)
Matters of National Environmental Significance	EPBC Act Protected Matters Search Tool (PMST) (Department of Agriculture, Water and the Environment (DAWE 2021)

2.1.1 Flora and vegetation

Prior to the commencement of the field survey, a desktop assessment was undertaken to identify relevant environmental information pertaining to the project areas and within 20 km (desktop study area). The flora and vegetation desktop assessment included a review of:

- The Department of Agriculture, Water and the Environment (DAWE) Protected Matters Search Tool (PMST) for Matters of National Environmental Significance (MNES) and

species listed under the *Environment, Protection and Biodiversity Conservation Act 1999* (EPBC Act) potentially occurring within the desktop study area (DAWE 2021). (Appendix C)

- The Department of Biodiversity Conservation and Attractions (DBCA) Threatened and Priority Ecological Community (TECs and PECs) database for conservation significant communities present in the desktop study area (DBCA 2021a)
- The DBCA Threatened and Priority Flora and WA Herbarium databases for Threatened flora listed under the BC Act and listed Priority by the DBCA previously recorded in the desktop study area (DBCA 2021b)
- The DBCA *NatureMap* database for flora and fauna species previously recorded within the desktop study area (DBCA 2007-) (Appendix C)
- Aerial photography, geology/soils, land systems and hydrology information to provide background information on the variability of the environment and likely vegetation and habitat types present
- A flora likelihood of occurrence assessment (Appendix D).

2.1.2 Basic and targeted fauna

The fauna desktop assessment included a review of:

- DAWE PMST database to identify fauna species listed under the EPBC Act potentially occurring within the desktop study area (DAWE 2021) (Appendix C)
- The DBCA Threatened and Priority Fauna database for the study area (DBCA 2021c) (Appendix C).
- The DBCA *NatureMap* database for fauna species previously recorded within the study area (Appendix C). This database comprises the following composite datasets:
    - Atlas of Australian birds
    - Bird data -Birdlife Australia
    - Fauna Survey Returns Database (New)
    - WA Museum (WAM) databases (mammals, birds, reptiles)
- Aerial photography, geology/soils, land systems and hydrology information to provide background information on the variability of the environment and likely habitat types present
- A fauna likelihood of occurrence assessment. For the purpose of this study, exclusively marine animals (fish, wales, turtles etc.) were excluded from the likelihood of occurrence assessment as they are not expected to interact with the project areas (Appendix E).

2.2 Field survey

2.2.1 Survey timing and personnel

The post-wet single season detailed and targeted flora and vegetation survey and basic and targeted fauna survey was undertaken from 1 - 5 March 2021 by GHD senior botanist/ecologist Joel Collins (flora licence no. FB62000200-2) and GHD senior zoologist Robert Browne-Cooper.

2.2.2 Guiding documents

The survey methodology and data collection that GHD employed was consistent with:

- EPA Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016)

- EPA Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment (EPA 2020)
- DAWE (2011a) Survey Guidelines for Australia's Threatened Mammals
- DAWE (2011b) Survey Guidelines for Australia's Threatened Reptiles
- DBCA Guidelines for surveys to detect the presence of bilbies, and assess the importance of habitat in Western Australia (DBCA 2017)
- Verifying Bilby presence and the systematic sampling of wild populations using sign based protocols – with notes on aerial and ground based techniques and asserting absence (Southgate et al 2018).

2.2.3 Data collection and storage

Field data collection for the flora, vegetation and fauna survey was undertaken using GPS enabled Samsung tablets using electronic forms in Collector and tailored to IBSA spatial data requirements. Data was synced to the cloud at the conclusion of each field day. Field photographs were stored and where applicable have been provided as part of the Project deliverables.

2.2.4 Detailed and targeted flora and vegetation

The field survey was undertaken to identify and describe the broad dominant vegetation types, assess vegetation condition, and high intensity sampling of vascular flora taxa present at the time of survey. Searches for significant ecological communities and flora species were also undertaken during the field survey.

Field survey methods involved a combination of high intensity quadrat sampling and traversing the survey area by foot. Quadrats were conducted with each project area to describe the broad-scale vegetation and physical features. Seven quadrats were conducted throughout the project areas with the locations of each quadrat presented in Appendix A.

The survey methodology employed by GHD was undertaken with reference to the Environmental Protection Authority (EPA) *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016).

Field data at each quadrat site was recorded on a pro-forma data sheet and included the parameters detailed in Table 2. Survey and quadrat data are provided in Appendix D. A flora inventory was compiled from taxa listed in the quadrats and from opportunistic floristic records throughout the project areas.

Table 2 Flora and vegetation data collected during the field survey

Aspect	Measurement
Collection attributes	Site code, personnel/recorder, date, photograph of the site.
Physical features	Landform, slope, aspect, soil attributes, ground surface cover
Location	Coordinates recorded in GDA94 datum using a hand-held Global Positioning System (GPS) tool to accuracy approximately ± 5 m.
Vegetation condition	Broad-scale vegetation condition using the condition rating scale adapted by EPA (2016) for the Northern Botanical Province.
Disturbance	Level and nature of disturbances (e.g. weed presence, fire and time since last fire, impacts from grazing, infrastructure development activities).
Flora	List of dominant flora from each structural layer, list of all species at each quadrat including stratum, average height and cover using National Vegetation Information System (NVIS 2017).

Vegetation types

Vegetation types were identified and boundaries delineated using a combination of aerial photography, topographical features and field data/observations.

Vegetation types were described based on structure, dominant taxa and cover characteristics as defined by quadrat data and field observations. Vegetation unit descriptions follow the NVIS and are consistent with NVIS Level V (Association) and are grouped within NVIS Level III (Broad Floristic Formation). At Level V up to three taxa per stratum are used to describe the association (NVIS 2017).

Vegetation condition

The vegetation condition was assessed and mapped in accordance with the vegetation condition rating scale for the Northern Botanical Provinces devised by Trudgen (1988) and adapted by EPA (2016). The scale recognises the intactness of vegetation and consists of six rating levels. The vegetation condition rating scale is outlined in Appendix B.

Flora inventory, identification and nomenclature

A flora inventory was compiled from taxa listed in described quadrats and from opportunistic floristic records throughout the survey area.

Species well known to the survey botanist were identified in the field; all other species were collected and assigned a unique collection number to facilitate tracking. All specimens collected during the field assessment were dried and processed in accordance with the requirements of the WA Herbarium. Species were identified by the use of taxonomic literature, electronic keys and online electronic databases with reference to specimens at the WA Herbarium. Relevant taxonomic experts were also consulted where required.

The conservation status of all recorded flora was compared against the current lists available on *FloraBase* (WA Herbarium 1998–) and the EPBC Act Threatened species database provided by DAWE (2021).

Nomenclature used in this report follows that used by the WA Herbarium as reported on *FloraBase* (WA Herbarium 1998–).

Targeted flora searches

The results of the desktop assessment were reviewed, and a target list of significant flora taxa compiled. Ecological information (e.g. habitat, associated flora taxa and phenology) was sourced from *FloraBase* (WA Herbarium 1998–) and other relevant publications where available.

The targeted flora survey was completed con-currently with the vegetation and flora assessment, with timing occurring in early March 2021 to coincide with the flowering period of the majority of the target taxa for the bioregion. Appropriate habitat for significant flora taxa in the survey area was traversed on foot. Locations within the survey area with differing hydrology, fire or disturbance history to the surrounding areas were also searched where identified. Where significant flora taxa were identified the locations and number of plants present were recorded using handheld GPS units. A representative collection was also made for confirmation by the WA Herbarium.

2.2.5 Basic and targeted fauna

The post-wet season single phase basic and targeted assessment including a targeted Bilby assessment of the project areas was completed in association with the vegetation and flora suvey. The project areas were traversed by foot to identify and describe the dominant fauna

habitat types present and their condition, assess habitat for conservation listed species, undertake targeted Bilby assessment, and identify and record fauna species within the project areas. An assessment of the likelihood of conservation significant fauna and their habitats occurring within the project areas were also undertaken.

The fauna survey methodology and fauna data collection was undertaken with reference to the EPA *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA 2020).

Habitat assessment

A fauna habitat assessment was undertaken to document the type, value and extent of habitats within the project areas. The following information was recorded:

- Habitat structure (e.g. vegetation type, presence/absence of structural layers such as ground cover and mid storey
- Presence/absence of refuge including density of ground covers, fallen timber (coarse woody debris), hollow-bearing trees and stags and rocks/boulder piles, and the type and extent of each refuge
- Presence/absence of waterways including type, extent and habitat quality within waterway
- Location of the habitat within the survey area in comparison to the habitat within the surrounding landscape
- Habitat connectivity and identification of wildlife corridors within and immediately adjacent to the survey area
- Current land use and disturbance history
- Evaluation of key habitat features and types identified during the desktop assessment relevant to fauna of conservation significance
- Evaluation of the likelihood of occurrence of conservation significant fauna within the habitat (based on presence of suitable habitat)
- A representative photograph of each habitat type.

Opportunistic fauna observations

Opportunistic fauna searches were also conducted across the survey area. Opportunistic searches involved:

- Searching the survey area for tracks, scats, bones, diggings and feeding areas for both native and feral species
- Searching through microhabitats including turning over logs or rocks, turning over leaf litter and examining tree hollows and hollow logs
- Visual and aural surveys, which accounted for many bird species potentially utilising the survey area
- Recording GPS locations of any conservation significant fauna species.

Targeted Greater Bilby assessment

The Greater Bilby is recognised as a locally and regionally significant species that requires targeted survey in the Dampier Peninsular area. The sampling technique endorsed by the DEE references Southgate's methods of Greater Bilby Plot Assessments (Southgate et al. 2005) and by the DBCA guidelines (DBCA 2017), which involves an assessment of 2 ha plots as a method of sampling a proportion of a given survey area. Given the small size of the project areas, the

approach for the current survey was to extend the plot assessment method throughout the project area to detect Greater Bilby activity and specifically to detect burrows of resident animals if present. By extending the plot assessment method to cover the entire project area, the target survey provided complete coverage.

The survey area was traversed on foot for evidence of Greater Bilby activity indicating recent presence. Searching was carried out by GHD senior zoologist Robert Browne-Cooper and senior botanist/ecologist Joel Collins. Personnel walked in a line spaced approximately 20 - 30 metres apart providing adequate on-ground coverage to target Greater Bilby. During the traverses, if present, evidence of the species was recorded including burrows, foot prints, foraging signs, and scats. GPS devises were used during traversing to log search track to inform on site coverage (Figure 4, Figure 10, Figure 16, Figure 22).

Fauna species identification

Identification of fauna species was made in the field using available field guides and electronic guides (e.g. Morcombe 2004).

Nomenclature used in this report follows WAM as reported on NatureMap (DBCA 2007–). This nomenclature is considered the most up-to-date species information for WA groups: reptiles, amphibians, invertebrates and mammals (including bats). All bird nomenclature follows Christidis and Boles (2008). Other reference materials used are presented in Table 3.

Table 3 Fauna references

Fauna Group	Field Guide
Mammals	Menkhorst and Knight (2010), Van Dyck and Strahan (2008)
Birds	Christidis and Boles (2008), Morcombe (2004)
Reptiles	Wilson and Swan (2017)
Amphibians	Tyler and Doughty (2009)

2.3 Limitations

2.3.1 Desktop limitations

The EPBC Act PMST is based on bioclimatic modelling for the potential presence of species. As such, this does not represent actual records of the species within the project area. The records from the DBCA searches of Threatened and Priority flora and fauna provide more accurate information for the general area and local occurrence. However, some collections, sighting or trapping records cannot be dated and often misrepresent the current range of Threatened and Priority species.

2.3.2 Field survey limitations

The EPA (2016, 2020) Technical Guides states that flora and fauna survey reports for environmental impact assessment in WA should contain a section describing the limitations of the survey methods used. The limitations and constraints associated with this field survey are discussed in Table 4. Based on this assessment, the survey effort has not been subject to any constraints, which affect the thoroughness of the assessment and the conclusions were formed.

Table 4 Field survey limitations

Aspect	Constraint	Comment
Sources of information and availability of	Nil	Adequate information is available for the survey area, this includes broadscale (1:1,000,000) mapping by Beard (1977) and digitised by

Aspect	Constraint	Comment
contextual information.		Shepherd et al. (2002) and database searches (DBCA and *NatureMap*).
Scope (what life forms were sampled etc.)	Nil	Vascular flora and terrestrial vertebrate fauna were sampled during the survey. Non-vascular flora, invertebrate and aquatic fauna were not surveyed.
Proportion of flora collected and identified (based on sampling, timing and intensity) Proportion of fauna identified, recorded and/or collected	Nil	The detailed and targeted vegetation and flora survey was undertaken in early March, which is within the recommended timing for flora surveys in the Northern Botanical Province region. The recommended timing is during the wet season (January-March) (EPA 2016). The flora recorded from the field is detailed in section 7 and a full flora species list is provided in Appendix D. The portion of flora collected and identified was considered representative for the survey area. The basic and targeted fauna survey was also undertaken in early March 2021. The fauna assessment sampled those species that can be easily seen, heard or have distinctive signs, such as tracks, scats, diggings, etc. Many cryptic species would not have been identified during a basic survey and seasonal variation within species often requires targeted surveys at a particular time of the year. Of the fauna species recorded during the survey, all were identified to species level. The fauna assessment was aimed at identifying habitat types and terrestrial vertebrate fauna utilising the survey area. No sampling for invertebrates or aquatic species occurred. The information available on the identification, distribution and conservation status of invertebrates is generally less extensive than vertebrate species.
Flora determination	Nil	Flora determination was undertaken by the survey botanist in the field. Species that could not be identified in the field were collected and identified at the WA Herbarium by the experienced taxonomic botanist Sharnya Thomas and Pali Jayasekara (GHD). Eight taxa were uncertain at a species level due to lack of flowering/fruiting material. These collections are not similar to known conservation significant flora (as identified in the desktop searches). The taxonomy and conservation status of the WA flora is dynamic. This report was prepared with reliance on taxonomy and conservation status current at the time report development, but it should be noted this may change in response to ongoing research and review of International Union for Conservation Nature criteria.
Completeness and further work which might be needed (e.g. was the relevant area fully surveyed)	Nil	The whole of the project areas was accessed on foot. The project area was adequately surveyed during the field survey in line with the scope. Adequate number of floristic sampling was done for a detailed flora survey. Where possible three quadrats were sampled per vegetation type, however, one quadrat was deemed appropriate for VT02 and two quadrats for VT03 due to the small geographical area these vegetation types covered. Additional opportunistic sampling was undertaken through all the project areas to develop a comprehensive species inventory.
Mapping reliability	Nil	The vegetation and fauna habitats were mapped using high-resolution ESRI aerial imagery obtained from Landgate, topographical features, previous broad scale mapping (Beard 1977) and field data. Data was recorded in the field using hand-held GPS tools. Certain atmospheric factors and other sources of error can affect the accuracy of GPS receivers. The Garmin GPS units and GPS enabled tablets used for this survey are accurate to within ±5 metres on average.
Timing/weather/ season/cycle	Nil	The field surveys were conducted during autumn (1 - 5 March 2021 for flora and vegetation survey and for the fauna survey). In the three months prior to the survey (December-February), the Cygnet Bay station No. 003004 (BoM 2021) recorded a total of

Aspect	Constraint	Comment
		1,017 mm of rainfall. This is well above the recorded long-term average for the same period (December-February; 536.8 mm) (BoM 2021). The weather conditions recorded during the survey were generally dry, hot and high humidity with light winds. A summary of the climatic conditions are provided: • Daily maximum temperature 34.5 °C • Daily minimum temperature 26.0 °C • Daily rainfall 0 mm. The weather conditions recorded during the survey periods are considered unlikely to have impacted upon the flora and fauna survey. The survey timing was considered appropriate for the flora and fauna field survey.
Disturbances (e.g. fire, flood, accidental human intervention)	Nil	Some of the survey area has been subjected to historical disturbance events (e.g. clearing, weeds); however, these disturbances did not affect the survey.
Intensity (in retrospect, was the intensity adequate)	Nil	The vascular flora of the survey area was sampled in accordance with EPA (2016) and terrestrial fauna sampled in accordance with EPA (2020). The survey area was sufficiently covered by the field botanist and zoologist during the survey.
Resources	Nil	Adequate resources were employed during the field survey. Ten person days were spent undertaking the survey using one botanist and one zoologist.
Access restrictions	Nil	The survey area was accessed on foot. There were no access restrictions.
Experience levels	Nil	The botanist and zoologist who executed the survey are practitioners suitably qualified and experienced in their respective fields. The field team lead, Joel Collins (flora licence no. FB62000081-2) is a senior botanist with more than 17 years' experience leading and conducting vegetation and flora surveys (detailed, basic and targeted) in the northern bioregion, including undertaking numerous flora and fauna surveys in the Pindanland sub-region. Senior Zoologist Robert Browne-Cooper has over 17 years' experience undertaking fauna surveys (detailed, basic and targeted) within the northern bioregion of WA, including undertaking numerous surveys in the Pindanland sub-region including targeted surveys for Bilby.

3. Desktop assessment – Ardyaloon

3.1 Location

The Ardyaloon project area is located near the northern extent of the Dampier Peninsula, adjacent to One Arm Point Road. The project area is approximately 1.5 km west of the One Arm community (Figure 1, Appendix A).

3.2 Physical environment

Ecological and land use constraints for Ardyaloon project area are presented on Figure 2, Appendix A.

3.2.1 Climate

The Dampier Peninsula has a tropical climate and is characterised by hot wet summer (December to March) and a dry season (April to November). Rainfall is generally received during the summer as a result of unpredictable tropical downpours and cyclonic low pressure systems. The closest BoM weather station with sufficient historical data is Cygnet Bay (site number 003057), located approximately 2 km east of the project area.

Climate data from this station indicates the mean maximum temperature ranges from 35.3 °C in November to 28.2 °C in July. The mean minimum temperature ranges from 14.8 °C in July to 25.6 °C in December. The mean annual rainfall is 781.0 mm, with approximately 56 rain days a year (BoM 2021).

3.2.2 Land systems and soil

The Kimberley region has been surveyed by the Department of Primary Industries and Regional Development (DPIRD) and others for the purposes of land classification, mapping and resource evaluation. One hundred and eleven land systems have been described for the region, which are distinguished on the basis of topography, geology, soils and vegetation (Payne and Schoknecht 2011). One land system is relevant within the project area Table 5.

Table 5 Land systems within the project area

Land system	Description	Geology	Geomorphology
Reeves	Sand plain with scattered hills and minor plateaux, reddish sandy soils, pindan.	Subhorizontal or gently dipping sandstone, sandy siltstone, and silicified quartz sandstone of Cretaceous age; Quaternary aeolian sand.	Formed by dissection of the Kimberley surface - hill lands: strike belts up to 4.8 km wide, with scattered hills, dip slopes with thin sand cover and local outcrop, and sandplain; sparse, branching drainage pattern; relief up to 60 m.

3.2.3 Acid sulphate soils

A review of the ASS risk mapping indicates the soil under the project area has ‘moderate to low’ risk of containing ASS. The ‘moderate to low’ risk rating indicates the risk of ASS occurring within 3 m of natural soil surface however this rating indicates a high to moderate risk of ASS beyond 3 m of natural soil surface.

The wider study area records as both a ‘high to moderate’ and ‘moderate to low’ risk of containing ASS. The ‘high to moderate’ risk rating indicates the risk of ASS occurring within 3 m of the natural soil surface.

3.3 Land use

3.3.1 Conservation reserves and estates

No DBCA managed conservation area occur within the project area. The closest is located approximately 9 km north; Swan Island Nature Reserve (Class A R 34257).

3.3.2 Environmentally sensitive areas

The project area is located within ESA no. 7286, within the buffer for Monsoon thickets on coastal sand dunes TEC.

3.4 Hydrology

The GoWA (2021a) data layers identified the water resource aspects present in the project area. These are detailed below in Table 6.

Table 6 Hydrology aspects within the project area

Aspect	Details	Results
Groundwater Areas	Groundwater areas proclaimed under the RIWI Act	Canning-Kimberley
Surface Water Areas	Surface water areas proclaimed under the RIWI Act	None present
Irrigation District	Irrigation Districts proclaimed under the RIWI Act	None present
Rivers	Rivers proclaimed under the Rights in RIWI Act	None present
Public Drinking Water Source Areas (PDWSA)	PDWSA is a collective term used for the description of Water Reserves, Catchment Areas and Underground Pollution Control Areas declared (gazetted) under the provisions of the *Country Area Water Supply Act 1947*	None present
Waterways Management Areas	Areas proclaimed under *the Waterway Conservation Act 1976*	None present

3.4.1 Wetlands

No Internationally (Ramsar) or nationally important wetlands are located within 20 km of the project area.

3.5 Vegetation and flora

3.5.1 Regional biogeography

The project area is located in the Dampierland bioregion and Pindanland sub-region as described by Interim Biogeographic Regionalisation of Australia (IBRA).

The Dampierland bioregion is characterised by extensive plains, ranges and spectacular gorges. The vegetation is characterised by acacia thickets with scattered trees and areas of

grasslands and savannas. The bioregion contains Aboriginal land, pastoral leases and some conservation reserves. The main industries are beef cattle, horticulture and tourism. Major population centres are Broome, Derby and Fitzroy Crossing.

The Pindanland subregion comprises sandplains of the Dampier Peninsular and western part of Dampier Land, including the hinterland of the Eighty Mile Beach. It is a fine-textured sand-sheet with subdued dunes and includes the paleodelta of the Fitzroy River. The vegetation is described primarily as pindan. This is the coastal, semi-arid, north-western margin of the Canning Basin (Graham 2001).

3.5.2 Broad vegetation mapping and extent

Broad scale (1:1,000,000) pre-European vegetation mapping of the area was completed by Beard (1977) at an association level. The mapping indicates that one vegetation association is present within the project area:

- Shrublands, pindan; *Acacia tumida* shrubland with ghost gum (*Eucalyptus papuana*) & *E. setosa* medium woodland over curly spinifex (association 771).

The pre-European mapping has been adapted and digitised by Shepherd et al. (2002). The extent of vegetation associations have been determined by the state-wide vegetation remaining extent calculations maintained by DBCA (latest update March 2019 – GoWA 2021b). As shown in Table 7. The current extents remaining of all vegetation associations are greater than 95% of their calculated pre European extents at all scales (e.g. State, IBRA bioregion, IBRA subregion and Local Government Area (LGA)).

The Native Vegetation Extent data layer indicates there has been no previous clearing within the project area.

3.5.3 Conservation significant ecological communities

The DBCA TEC and PEC database identified one TEC within the study area. The project area is within the buffer of the TEC Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula. Details on these communities are provided in Table 8.

Table 7 Extent of pre-European vegetation associations mapped within the project area (Beard 1975, GoWA 2021b)

Vegetation association	Scale	Pre-European extent (ha)	Current extent (ha)	Remaining (%)	%current extent in all DBCA managed land (proportion of current extent)
771	State: Western Australia	35,671.30	34,884.39	97.79	-
	IBRA bioregion: Dampierland	34,907.23	34,672.53	99.33	-
	IBRA sub-region: Pindanland	34,907.23	34,672.53	99.33	-
	LGA: Shire of Broome	35,671.30	34,884.39	97.79	-

Table 8 Threatened and Priority Ecological Communities identified in the desktop searches

Community type	EPBC Act	DBCA	Description (DBCA 2021a)
Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula (TEC)	Endangered	Vulnerable	Unusual vine thicket community and Camaenid land snails assemblage located on Napier Range. Threats: frequent fires leading to vegetation changes; loss of vine thickets and leaf litter.

3.5.4 Flora diversity

The *NatureMap* database identified 520 flora taxa previously recorded within the study area (DBCA 2007-). This total includes 515 native and 5 naturalised (weed) species. The most common families include Fabaceae (78 species) and Poaceae (50 species).

The NatureMap database search for flora is provided in Appendix C.

3.5.5 Conservation significant flora

The EPBC Act PMST and DBCA NatureMap, WAHERB and TPFL databases identified the presence/potential presence of ten conservation significant taxa within a 20 km buffer of the project area. The desktop searches recorded:

- Four Priority 1 taxa
- One Priority 2 taxa
- Five Priority 3 taxa

The locations of conservation significant flora registered on the DBCA databases are mapped in Figure 2, Appendix A.

3.6 Fauna

3.6.1 Fauna diversity

The *NatureMap* database identified 369 fauna species previously recorded within 20 km of the project area. This total comprised 209 birds, 38 reptiles, 25 mammals, 2 amphibians, and 1 invertebrate and 94 fish. Of the 369 fauna species previously recorded 365 were native species and 4 were naturalised (introduced) species.

The *NatureMap* database search is provided in Appendix C.

3.6.2 Conservation significant fauna

The EPBC Act PMST and *NatureMap* database identified the presence/potential presence of 54 conservation significance fauna within the study area. This total does not include those species that are exclusively marine as no marine habitat is present within the project area or indirectly impacted by the project.

4. Desktop assessment – Beagle Bay

4.1 Location

The Beagle Bay project area is located towards the northern extent of the Dampier Peninsula, approximately 115 km north east of Broome. The project area is approximately 1 km south from Beagle Bay community (Figure 7, Appendix A).

4.2 Physical environment

Ecological and land use constraints for Beagle Bay project area are presented on Figure 8, Appendix A.

4.2.1 Climate

The Dampier Peninsula has a tropical climate and is characterised by hot wet summer (December to March) and a dry season (April to November). Rainfall is generally received during the summer as a result of unpredictable tropical downpours and cyclonic low pressure systems. The closest BoM weather station with sufficient historical data is Cygnet Bay (site number 003057), located approximately 50 km north of the project area.

Climate data from this station indicates the mean maximum temperature ranges from 35.3 °C in November l to 28.2 °C in July. The mean minimum temperature ranges from 14.8 °C in July to 25.6 °C in December. The mean annual rainfall is 781.0 mm, with approximately 56 rain days a year (BoM 2021).

4.2.2 Land systems and soils

The Kimberley region has been surveyed by DPIRD and others for the purposes of land classification, mapping and resource evaluation. One hundred and eleven land systems have been described for the region, which are distinguished on the basis of topography, geology, soils and vegetation (Payne and Schoknecht 2011). One land system is relevant within the project area as shown in Table 9.

Table 9 Land systems within the project area

Land system	Description	Geology	Geomorphology
Wanganut	Low lying sandplains and dune fields with through going drainage supporting pindan acacia shrublands with emergent eucalypt trees	Quaternary aeolian soils	Sandplain and dunefields with through-going drainage: sandplain, mainly in the upper parts, with stable dunefields, low lying sandplain, and scattered pans and depressions; sparse to moderately dense branching drainage pattern; relief up to 9 m.

4.2.3 Acid sulphate soils

A review of the ASS risk mapping indicates the soil under the project area has ‘moderate to low’ risk of containing ASS. The ‘moderate to low’ risk rating indicates the risk of ASS occurring

within 3 m of natural soil surface however this rating indicates a high to moderate risk of ASS beyond 3 m of natural soil surface.

The wider study area records as both a 'high to moderate' and 'moderate to low' risk of containing ASS. The 'high to moderate' risk rating indicates the risk of ASS occurring within 3 m of the natural soil surface.

4.3 Land use

4.3.1 Conservation reserves and areas

No DBCA managed areas are located within the project area or wider study area.

4.3.2 Environmentally sensitive areas

No ESAs are located within the project area. The closest ESA is located approximately 10 km north west; no.7278.

4.4 Hydrology

The GoWA (2021a) data layers identified the water resource aspects present in the project area. These are detailed below in Table 10.

Table 10 Hydrology aspects within the project area

Aspect	Details	Results
Groundwater Areas	Groundwater areas proclaimed under the RIWI Act	Canning-Kimberley
Surface Water Areas	Surface water areas proclaimed under the RIWI Act	None present
Irrigation District	Irrigation Districts proclaimed under the RIWI Act	None present
Rivers	Rivers proclaimed under the Rights in RIWI Act	None present
Public Drinking Water Source Areas (PDWSA)	PDWSA is a collective term used for the description of Water Reserves, Catchment Areas and Underground Pollution Control Areas declared (gazetted) under the provisions of the *Country Area Water Supply Act 1947*	None present
Waterways Management Areas	Areas proclaimed under *the Waterway Conservation Act 1976*	None present

4.4.1 Wetlands

No Internationally (Ramsar) or nationally important wetlands are located within 20 km of the project area.

4.5 Vegetation and flora

4.5.1 Regional biogeography

The project area is located in the Dampierland bioregion and Pindanland sub-region as described by IBRA.

The Dampierland bioregion is characterised by extensive plains, ranges and spectacular gorges. The vegetation is characterised by acacia thickets with scattered trees and areas of grasslands and savannas. The bioregion contains Aboriginal land, pastoral leases and some

conservation reserves. The main industries are beef cattle, horticulture and tourism. Major population centres are Broome, Derby and Fitzroy Crossing.

The Pindanland subregion comprises sandplains of the Dampier Peninsular and western part of Dampier Land, including the hinterland of the Eighty Mile Beach. It is a fine-textured sand-sheet with subdued dunes and includes the paleodelta of the Fitzroy River. The vegetation is described primarily as pindan. This is the coastal, semi-arid, north-western margin of the Canning Basin (Graham 2001).

4.5.2 Broad vegetation mapping and extent

Broad scale (1:1,000,000) pre-European vegetation mapping of the area was completed by Beard (1977) at an association level. The mapping indicates that two vegetation associations are present within the project area:

- Shrublands, pindan; *Acacia tumida* shrubland with grey box & cabbage gum medium woodland over ribbon grass & curly spinifex (association 750)
- Grasslands, tall bunch grass savanna, sparse low tree; ribbon grass & paperbarks (association 67).

The pre-European mapping has been adapted and digitised by Shepherd et al. (2002). The extent of vegetation associations have been determined by the state-wide vegetation remaining extent calculations maintained by DBCA (latest update March 2019 – GoWA 2021b). As shown in Table 11. The current extents remaining of all vegetation associations are greater than 99% of their calculated pre European extents at all scales (e.g. State, IBRA bioregion, IBRA subregion and LGA).

The Native Vegetation Extent data layer indicates that there has been no previous clearing within the project area.

4.5.3 Conservation significant ecological communities

The DBCA TEC and PEC database identified one TEC and three State-listed PECs within the study area. The project area is within the buffer of the PEC Kimberley Vegetation Association 67. Details on these communities are provided in Table 12.

Table 11 Extent of pre-European vegetation associations mapped within the project area (Beard 1975, GoWA 2021b)

Vegetation association	Scale	Pre-European extent (ha)	Current extent (ha)	Remaining (%)	%current extent in all DBCA managed land (proportion of current extent)
750	State: Western Australia	1,231,155.50	1,225,687.52	99.56	
	IBRA bioregion: Dampierland	1,229,182.16	1,225,280.52	99.68	2.78
	IBRA sub-region: Pindanland	1,221,734.45	1,217,843.72	99.68	2.80
	LGA: Shire of Broome	1,115,559.36	1,110,131.18	99.51	3.07
67	State: Western Australia	27,285.40	27,240.50	99.84	-
	IBRA bioregion: Dampierland	27,285.40	27,240.50	99.84	-
	IBRA sub-region: Pindanland	27,285.40	27,240.50	99.84	-
	LGA: Shire of Broome	23,775.29	23,730.39	99.81	-

Table 12 Threatened and Priority Ecological Communities identified in the desktop searches

Community type	EPBC Act	BC Act/DBCA	Description (DBCA 2021a)
Assemblages of Lolly Well Springs wetland complex (PEC)		P3	Wetland complex containing numerous low organic mound springs with moats. Threats: recreational use, potential tourism developments, weed invasion, rubbish dumping, grazing and trampling (cattle).
Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula (TEC)	Endangered	Vulnerable	Unusual vine thicket community and Camaenid land snails assemblage located on Napier Range. Threats: frequent fires leading to vegetation changes; loss of vine thickets and leaf litter.

Community type	EPBC Act	BC Act/DBCA	Description (DBCA 2021a)
Kimberley Vegetation Association 37 (PEC)		P3	Shrublands; teatree thicket Threats: extensive threatening processes acting at landscape scales, namely altered fire regimes, over grazing, and weed invasion.
Kimberley Vegetation Association 67 (PEC)		P3	Grasslands, tall bunch grass savanna, sparse low tree; ribbon grass & paperbarks Threats: extensive threatening processes acting at landscape scales, namely altered fire regimes, over grazing, and weed invasion.

4.5.4 Flora diversity

The *NatureMap* database identified 206 flora taxa, representing 67 families and 151 genera previously recorded within the project area. This total comprised 190 native taxa and 16 naturalised (introduced) taxa. Dominant families recorded included Fabaceae (28 taxa), Poaceae (25 taxa) and Cyperaceae (16 taxa). The *NatureMap* database search is provided in Appendix C.

4.5.5 Conservation significant flora

The EPBC Act PMST, *NatureMap* database and DBCA TPFL and WAHERB databases identified the presence/potential presence of 12 significant flora taxa within the study area. The desktop searches recorded:

- Six Priority 1 taxa
- Six Priority 3 taxa.

The locations of conservation significant flora registered on the DBCA databases are mapped in Figure 14, Appendix A.

4.6 Fauna

4.6.1 Fauna diversity

The *NatureMap* database identified 286 fauna species previously recorded within 20 km of the project area. This total comprised 115 birds, 33 reptiles, 10 mammals, 7 amphibians, and 55 invertebrates and 66 fish. Of the fauna species previously recorded were native. The *NatureMap* database search is provided in Appendix C.

4.6.2 Conservation significant fauna

The EPBC Act PMST and *NatureMap* database identified the presence/potential presence of 25 conservation significance fauna within the study area. This total does not include those species that are exclusively marine as no marine habitat is present within the project area or indirectly impacted by the project.

5. Desktop assessment – Bidyadanga

5.1 Location

The Bidyadanga project area is located on the Dampier Peninsular, approximately 93 km south east from Broome. The project area is approximately 0.85 km west from Bidyadanga community (Figure 13, Appendix A).

5.2 Physical environment

Ecological and land use constraints for Bidyadanga project area are presented on Figure 14, Appendix A.

5.2.1 Climate

The Dampier Peninsula has a tropical climate and is characterised by hot wet summer (December to March) and a dry season (April to November). Rainfall is generally received during the summer as a result of unpredictable tropical downpours and cyclonic low pressure systems. The closest BoM weather station with sufficient historical data is Bidyadanga (site number 003030), located approximately 5 km east of the project area.

Climate data from this station indicates. The mean maximum temperature ranges from 35.8 °C in April to 29.7 °C in July. Mean minimum temperature ranges from 14.1 °C in July to 26.0 °C in January. The mean annual rainfall is 513.5 mm, with approximately 116 rain days a year (BoM 2021).

5.2.2 Land systems and soils

The Kimberley region has been surveyed by the DPIRD and others for the purposes of land classification, mapping and resource evaluation. One hundred and eleven land systems have been described for the region, which are distinguished on the basis of topography, geology, soils and vegetation (Payne and Schoknecht 2011). One land system is relevant within the project area as shown in Table 13.

Table 13 Land systems within the project area

Land system	Description	Geology	Geomorphology
Yeeda	Sandplains with red and yellow sands supporting pindan acacia shrublands with emergent eucalypt trees	Quaternary aeolian sands	Sandplain and dunefields with little organised drainage; sandplain up to 16 km in extent, with shallow valleys, plains with thin sand cover, and scattered pans; limited surface drainage in zones of sheet-flow up to 3.2 km wide and extending up to 8 km downslope from adjacent uplands.

5.2.3 Acid sulphate soils

A review of the ASS risk mapping indicates the soil under the project area has ‘moderate to low’ risk of containing ASS. The ‘moderate to low’ risk rating indicates the risk of ASS occurring within 3 m of natural soil surface however this rating indicates a high to moderate risk of ASS beyond 3 m of natural soil surface.

5.3 Land use

5.3.1 Conservation reserves and areas

No DBCA managed areas are located within the survey or wider study area.

5.3.2 Environmentally sensitive areas

No ESAs are located within the survey or wider study area.

5.4 Hydrology

Desktop searches of the GoWA (2021a) data layers identified the water resource aspects present in the project area. These are detailed below in Table 14.

Table 14 Hydrology aspects within the project area

Aspect	Details	Results
Groundwater Areas	Groundwater areas proclaimed under the RIWI Act	Canning - Kimberley
Surface Water Areas	Surface water areas proclaimed under the RIWI Act	None present
Irrigation District	Irrigation Districts proclaimed under the RIWI Act	None present
Rivers	Rivers proclaimed under the Rights in RIWI Act	None present
Public Drinking Water Source Areas (PDWSA)	PDWSA is a collective term used for the description of Water Reserves, Catchment Areas and Underground Pollution Control Areas declared (gazetted) under the provisions of the Metropolitan Water Supply, Sewage and Drainage Act 1909 or the Country Area Water Supply Act 1947.	None present
Waterways Management Areas	Areas proclaimed under the Waterway Conservation Act 1976	None present

5.4.1 Wetlands

No Internationally (Ramsar) or nationally important wetlands are located within 20 km of the project area.

5.5 Vegetation and flora

The project area is located in the Dampierland bioregion and Pindanland sub-region as described by IBRA.

The Dampierland bioregion is characterised by extensive plains, ranges and spectacular gorges. The vegetation is characterised by acacia thickets with scattered trees and areas of grasslands and savannas. The bioregion contains Aboriginal land, pastoral leases and some conservation reserves. The main industries are beef cattle, horticulture and tourism. Major population centres are Broome, Derby and Fitzroy Crossing.

The Pindanland subregion comprises sandplains of the Dampier Peninsular and western part of Dampier Land, including the hinterland of the Eighty Mile Beach. It is a fine-textured sand-sheet with subdued dunes and includes the paleodelta of the Fitzroy River. The vegetation is described primarily as pindan. This is the coastal, semi-arid, north-western margin of the Canning Basin (Graham 2001).

5.5.1 Broad vegetation mapping and extent

Broad scale (1:1,00,000) pre-European vegetation mapping of the area was completed by Beard (1977) at an association level. The mapping indicates that one vegetation association is present within the project area:

- Shrublands, pindan; *Acacia eripoda* shrubland with scattered low bloodwood (*Eucalyptus dicromophloia*) & *E. setosa* over soft & curly spinifex on sandplain (association 699).

The pre-European mapping has been adapted and digitised by Shepherd et al. (2002). The extent of vegetation associations have been determined by the state-wide vegetation remaining extent calculations maintained by DBCA (latest update March 2019 – GoWA 2021b). As shown in Table 15. The current extents remaining of all vegetation associations are greater than 99% of their calculated pre-European extents at all scales (e.g. State, IBRA bioregion, IBRA subregion and LGA).

The Native Vegetation Extent data layer indicates that majority of the project area has undergone no clearing. A small section on the eastern edge of the project area has been previously cleared.

5.5.2 Conservation significant ecological communities

The DBCA TEC and PEC database identified two State-listed PECs within the study area. Details on these communities are provided in Table 16.

Table 15 Extent of pre-European vegetation associations mapped within the project area (Beard 1975, GoWA 2021b)

Vegetation association	Scale	Pre-European extent (ha)	Current extent (ha)	Remaining (%)	%current extent in all DBCA managed land (proportion of current extent)
699	State: Western Australia	1,986,450.05	1,984,438.78	99.90	0.47
	IBRA bioregion: Dampierland	1,976,313.50	1,974,958.06	99.93	0.48
	IBRA sub-region: Pindanland	1,796,194.92	1,794,994.17	99.93	0.52
	LGA: Shire of Broome	1,628,642.72	1,626,791.54	99.89	0.58

Table 16 Threatened and Priority Ecological Communities identified in the desktop searches

Community type	EPBC Act	DBCA	Description (DBCA 2021)
Roebuck Land System		P3	Paleo-tidal coastal plains and tidal flats with saline soil supporting salt-water couch grasslands, samphire low shrublands, melaleuca thickets and mangroves. Threats: extensive threatening processes acting at landscape scales, namely frequent fires leading to loss of trees and shrubs, over grazing, and weed invasion (buffel grass).
Eighty Mile Land System		P3	Beach foredunes, longitudinal coastal dunes and sandy plains with tussock grasslands and spinifex grasslands. Threats: extensive threatening processes acting at landscape scales, namely altered fire regimes, over grazing, erosion, and weed invasion (buffel grass).

5.5.3 Flora diversity

The *NatureMap* database identified 99 flora taxa, representing 41 families and 65 genera previously recorded within the project area. This total comprised 97 native taxa and 2 naturalised (introduced) taxa. Dominant families recorded included Fabaceae (22 taxa), Caulerpaceae (6 taxa) and Malvaceae (6 taxa).

The *NatureMap* database search is provided in Appendix C.

5.5.4 Conservation significant flora

The EPBC Act PMST, *NatureMap* database and DBCA TPFL and WAHERB databases identified the presence/potential presence of one conservation significance flora (Priority 3) taxa within the study area.

5.6 Fauna

5.6.1 Fauna diversity

The *NatureMap* database identified 250 fauna species previously recorded within 10 km of the project area. This total comprised 163 birds, 33 reptiles, 21 mammals, 3 amphibians, and 1 invertebrates and 29 fish. Of the 250 fauna species previously recorded 247 were native species and 3 were naturalised (introduced) species. The *NatureMap* database search is provided in Appendix C.

5.6.2 Conservation significant fauna

The EPBC Act PMST and *NatureMap* database identified the presence/potential presence of 50 conservation significance fauna within the study area. This total does not include those species that are exclusively marine as no marine habitat is present within the project area or indirectly impacted by the project.

6. Desktop assessment – Djarindjin

6.1 Location

The Djarindjin project area is located near the northern extent of the Dampier Peninsular, approximately 175 km north east of Broome. The project area is approximately 0.52 km east from Djarindjin community (Figure 19, Appendix A).

6.2 Physical environment

Ecological and land use constraints for Djarindjin project area are presented on Figure 20, Appendix A.

6.2.1 Climate

The Dampier Peninsula has a tropical climate and is characterised by hot wet summer (December to March) and a dry season (April to November). Rainfall is generally received during the summer as a result of unpredictable tropical downpours and cyclonic low pressure systems. The closest BoM weather station with sufficient historical data is Cygnet Bay (site number 003057), located approximately 15 km north of the project area.

Climate data from this station indicates the mean maximum temperature ranges from 35.3 °C in November l to 28.2 °C in July. The mean minimum temperature ranges from 14.8 °C in July to 25.6 °C in December. The mean annual rainfall is 781.0 mm, with approximately 56 rain days a year (BoM 2021).

6.2.2 Land systems and soils

The Kimberley region has been surveyed by DPIRD and others for the purposes of land classification, mapping and resource evaluation. One hundred and eleven land systems have been described for the region, which are distinguished on the basis of topography, geology, soils and vegetation (Payne and Schoknecht 2011). One land system is relevant within the Broome region and the project area as shown in Table 17.

Table 17 Land systems within the project area

Land system	Description	Geology	Geomorphology
Yeeda	Sandplains with red and yellow sands supporting pindan acacia shrublands with emergent eucalypt trees	Quaternary aeolian sands	Sandplain and dunefields with little organised drainage; sandplain up to 16 km in extent, with shallow valleys, plains with thin sand cover, and scattered pans; limited surface drainage in zones of sheet-flow up to 3.2 km wide and extending up to 8 km downslope from adjacent uplands.

6.2.3 Acid sulphate soils

A review of the ASS risk mapping indicates the soil under the project area has ‘moderate to low’ risk of containing ASS. The ‘moderate to low’ risk rating indicates the risk of ASS occurring within 3 m of natural soil surface however this rating indicates a high to moderate risk of ASS beyond 3 m of natural soil surface.

The wider study area records as both a ‘high to moderate’ and ‘moderate to low’ risk of containing ASS. The ‘high to moderate’ risk rating indicates the risk of ASS occurring within 3 m of the natural soil surface.

6.3 Land use

6.3.1 Conservation reserves and areas

No DBCA managed areas are located within the survey or wider study area.

6.3.2 Environmentally sensitive areas

The project area is located within ESA no. 7290, which is within the buffer for the TEC Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula.

6.4 Hydrology

The GoWA (2021a) data layers identified the water resource aspects present in the project area. These are detailed below in Table 18.

Table 18 Hydrology aspects within the project area

Aspect	Details	Results
Groundwater Areas	Groundwater areas proclaimed under the RIWI Act	Canning-Kimberley
Surface Water Areas	Surface water areas proclaimed under the RIWI Act	None present
Irrigation District	Irrigation Districts proclaimed under the RIWI Act	None present
Rivers	Rivers proclaimed under the Rights in RIWI Act	None present
Public Drinking Water Source Areas (PDWSA)	PDWSA is a collective term used for the description of Water Reserves, Catchment Areas and Underground Pollution Control Areas declared (gazetted) under the provisions of the *Country Area Water Supply Act 1947*	None present
Waterways Management Areas	Areas proclaimed under *the Waterway Conservation Act 1976*	None present

6.4.1 Wetlands

No Internationally (Ramsar) or nationally important wetlands are located within 20 km of the project area.

6.5 Vegetation and flora

6.5.1 Regional biogeography

The project area is located in the Dampierland bioregion and Pindanland sub-region as described by IBRA.

The Dampierland bioregion is characterised by extensive plains, ranges and spectacular gorges. The vegetation is characterised by acacia thickets with scattered trees and areas of grasslands and savannas. The bioregion contains Aboriginal land, pastoral leases and some conservation reserves. The main industries are beef cattle, horticulture and tourism. Major population centres are Broome, Derby and Fitzroy Crossing.

The Pindanland subregion comprises sandplains of the Dampier Peninsular and western part of Dampier Land, including the hinterland of the Eighty Mile Beach. It is a fine-textured sand-sheet with subdued dunes and includes the paleodelta of the Fitzroy River. The vegetation is described primarily as pindan. This is the coastal, semi-arid, north-western margin of the Canning Basin (Graham 2001).

6.5.2 Broad vegetation mapping and extent

Broad scale (1:1,000,000) pre-European vegetation mapping of the area was completed by Beard (1977) at an association level. The mapping indicates that one vegetation association is present within the project area:

- Shrublands, pindan; *Acacia tumida* shrubland with grey box & cabbage gum medium woodland over ribbon grass & curly spinifex (association 750).

The pre-European mapping has been adapted and digitised by Shepherd et al. (2002). The extent of vegetation associations have been determined by the state-wide vegetation remaining extent calculations maintained by DBCA (latest update March 2019 – GoWA 2021b). As shown in Table 19. The current extents remaining of all vegetation associations are greater than 99% of their calculated pre European extents at all scales (e.g. State, IBRA bioregion, IBRA subregion and LGA).

The Native Vegetation Extent data layer indicates that there has been no previous clearing within the project area.

6.5.3 Conservation significant ecological communities

The DBCA TEC and PEC database identified one TEC and one State-listed PEC within the study area. The project area is within the buffer for the TEC Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula. Details on these communities are provided in Table 20.

Table 19 Extent of pre-European vegetation associations mapped within the project area (Beard 1975, GoWA 2021b)

Vegetation association	Scale	Pre-European extent (ha)	Current extent (ha)	Remaining (%)	%current extent in all DBCA managed land (proportion of current extent)
750	State: Western Australia	1,231,155.50	1,225,687.52	99.56	
	IBRA bioregion: Dampierland	1,229,182.16	1,225,280.52	99.68	2.78
	IBRA sub-region: Pindanland	1,221,734.45	1,217,843.72	99.68	2.80
	LGA: Shire of Broome	1,115,559.36	1,110,131.18	99.51	3.07

Table 20 Threatened and Priority Ecological Communities identified in the desktop searches

Community type	EPBC Act	DBCA	Description (DBCA 2021)
Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula	Endangered	Vulnerable	Unusual vine thicket community and Camaenid land snails assemblage located on Napier Range. Threats: frequent fires leading to vegetation changes; loss of vine thickets and leaf litter
Kimberley Vegetation Association 37		P3	Shrublands; teatree thicket. Threats: extensive threatening processes acting at landscape scales, namely altered fire regimes, over grazing, and weed invasion

6.5.4 Flora diversity

The *NatureMap* database identified 454 flora taxa, representing 111 families and 265 genera previously recorded within the study area. This total comprised 426 native taxa and 28 naturalised (introduced) taxa. Dominant families recorded included Fabaceae (54 taxa), Poaceae (44 taxa) and Malvaceae (26 taxa). The *NatureMap* database search is provided in Appendix C.

6.5.5 Conservation significant flora

Searches of the EPBC Act PMST, *NatureMap* database and DBCA TPFL and WAHERB databases identified the presence/potential presence of six conservation significance flora taxa within the study area. The desktop searches recorded:

- Two Priority 1 taxa
- Four Priority 3 taxa.

The locations of conservation significant flora registered on the DBCA databases are mapped in Figure 20, Appendix A.

6.6 Fauna

6.6.1 Fauna diversity

The *NatureMap* database identified 248 fauna species previously recorded within 10 km of the project area. This total comprised 178 birds, 39 reptiles, 21 mammals, 4 amphibians, and 1 invertebrates and 5 fish. Of the 248 fauna species previously recorded 247 were native species and 1 were naturalised (introduced) species.

The *NatureMap* database search is provided in Appendix C.

6.6.2 Conservation significant fauna

Searches of the EPBC Act PMST and *NatureMap* database identified the presence/potential presence of 58 conservation significance fauna within the study area. This total does not include those species that are exclusively marine as no marine habitat is present within the project area or indirectly impacted by the project.

7. Field survey results

7.1 Flora and vegetation

7.1.1 Vegetation types

Three vegetation types aligning with broad landforms were identified and described in the project areas, not including cleared tracks:

Djarindjin, Beagle Bay and Ardyaloon project areas:

- VT01 - *Eucalyptus miniata* and *Corymbia greeniana* woodland to isolated clumps of trees on Pindan red sand loam on low plain

Beagle Bay project area:

- VT02 - *Corymbia greeniana* and *Corymbia bella* isolated clumps of trees over *Melaleuca nervosa* subsp *crosslandiana* open woodland on silty loam over clay on drainage flats/floodplain

Bidyadanga project area:

- VT03 - *Corymbia hamersleyana* and *Corymbia flavescens* open woodland on red brown sandplain.

The vegetation types are described in further detail in Table 21 and mapped in Figure 5, Figure 11, Figure 17 and Figure 23 (Appendix A).

7.1.1 Conservation significant vegetation communities

No TEC's listed under the EPBC Act or BC Act were identified within the project areas during the field survey. VT02 within the Beagle Bay project area represents the PEC Kimberley Vegetation Association 67, with this pre-European association previously mapped within the project area (Figure 11, Appendix A). VT02 is analogous with the Vegetation Association based on species present, type and landform.

The Ardyaloon and Djarindjin project areas occur within the buffer of the TEC Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula, however, this TEC was not recorded as the landform (coastal sand dunes) did not occur.

Table 21 Recorded vegetation types

Vegetation type	Vegetation Type Description	Condition and extent (ha)	Sampling sites	Photograph
VT01	*Eucalyptus miniata* and *Corymbia greeniana* open woodland to isolated clumps of trees over *Acacia tumida* var. *kulparn* shrubland to open shrubland over *Wrightia saligna, Grevillea pyramidalis* subsp. *pyramidalis* and *Bauhinia cunninghamii* sparse shrubland over *Corchorus sidoides* subsp. *sidoides* and *Dodonaea hispidula* var. *arida* sparse shrubland over *Sorghum plumosum* and *Chrysopogon pallidus* tussock grassland over *Waltheria indica, Calandrinia strophiolata* and *Heliotropium leptaleum* open forbland on Pindan red sand loam on low plain.	18.29 ha	Dja_HP_01, Dja_HP_02, Ard_HP_03, Beag_HP_05	
VT02	*Corymbia greeniana* and *Corymbia bella* isolated clumps of trees over *Melaleuca nervosa* subsp *crosslandiana* open woodland over *Chrysopogon pallidus* open tussock grassland over *Fimbristylis rara, Fimbristylis cardiocarpa* and *Cyperus pulchellus* sparse sedgeland over *Scleromitrion scleranthoides, Buchnera linearis* and *Indigofera hirsuta* open forbland on silty loam over clay on drainage flats/floodplain. Represents DBCA P3 PEC Kimberley Vegetation Association 67.	3.21 ha	Beag_HP_04,	

Vegetation type	Vegetation Type Description	Condition and extent (ha)	Sampling sites	Photograph
VT03	*Corymbia hamersleyana* and *Corymbia flavescens* open woodland over *Grevillea pyramidalis* subsp. *pyramidalis* and *Acacia colei* var. *colei* sparse shrubland over *Indigofera monophylla, Acacia arida* and *Acacia adoxa* var. *subglabra* shrubland over *Triodia epactia* open hummock grassland over *Stylosanthes hamata, Indigofera linnaei* and *Calandrinia strophiolata* sparse forbland on red brown sandplain.	1.83 ha	Bid_HP_06, Bid_HP_07	
Cleared	Cleared areas devoid of native vegetation	4.07 ha		

7.1.1 Vegetation condition

The condition of the vegetation within the survey area ranged from Excellent to Good. Native vegetation covered 23.33 ha and cleared areas 4.07 ha. The extents of the vegetation condition within the survey area are detailed in Table 22 and mapped in Figure 5, Figure 11, Figure 17 and Figure 23 (Appendix A). The vegetation structure was intact with limited signs of cattle activity and a low number of introduced flora were recorded for most of the project areas except Bidyadanga where higher introduced species cover was recorded and previous disturbance. There were areas of previous disturbance through clearing and soil movement adjacent to the existing power infrastructure. Bidyadanga project area had previous soil disturbance with the presence of a large sump being previously constructed. There are some tracks present, in particular at the Bidyadanga project area.

Table 22 Vegetation condition

Vegetation Condition	Extent in survey area (ha)	%
Excellent	3.21	13.8
Very Good	15.31	65.6
Good	4.81	4.81
Degraded	0	0
Completely Degraded	0	0
Total	23.33	100

7.1.2 Flora diversity

One hundred and thirty-seven flora taxa (including subspecies and varieties) representing 38 families and 90 genera were recorded from the survey area during the field survey. This total comprised 128 native taxa and nine introduced flora taxa.

Dominant families recorded from the survey area included:

- Fabaceae (26 taxa)
- Poaceae (20 taxa)
- Cyperaceae and Malvaceae (10 taxa).

The full list of flora identified within the survey area complied by site and species list by family is provided in Appendix D.

7.1.3 Introduced flora

Nine introduced flora taxa were recorded in the project areas:

- **Azadirachta indica*
- **Cenchrus ciliaris*
- **Cenchrus setiger*
- **Clitoria ternatea*
- **Passiflora foetida*
- **Cyanthillium cinereum*
- **Stylosanthes hamata*
- **Stylosanthes humilis*
- **Stylosanthes scabra.*

None of the six introduced/naturalised flora taxa identified during the survey are listed as a Declared Pest under the *Biosecurity and Management Act 2007* or a Weed of National Significance.

**Azadirachta indica, *Cenchrus ciliaris, *Passiflora foetida* and **Stylosanthes scabra* were the most common introduced species recorded across the project areas. All of the introduced flora have been previously recorded from the Dampierland bioregion and Pindanland sub-region.

7.1.4 Significant flora

No EPBC Act or BC Act listed flora were recorded from the project areas. A tentative record of the Priority three taxa *Triodia ?acutispicula* was recorded within the Ardyaloon project area within VT01. This taxon could not be confidently confirmed as no fruiting material was available to correctly separate this species from other similar *Triodia* taxa, so the precautionary principle was applied given the nearby records of *Triodia acutispicula* (P3). This species was recorded with a cover of 20% with the location shown in Figure 5, Appendix A.

The Priority three taxa *Tephrosia andrewii* was recorded within the Bidyadanga project area. *Tephrosia andrewii* is an erect shrub or spindly shrub (broom-like) to 0.8 m high, flowering in April and October preferring Pindan red sand (WA Herbarium 1998-). A total of two individuals were recorded from one location as shown in Figure 17, Appendix A.

Likelihood of occurrence

A likelihood of occurrence assessment was conducted for all conservation significant flora taxa identified in the desktop assessment (Appendix D). Of the identified Priority species for the project areas the following assessment on likelihood post-survey is as follows:

- Ardyaloon – one taxa, *Triodia ?acutispicula,* was tentatively recorded and nine species are considered unlikely to occur
- Beagle Bay – 11 taxa are unlikely to occur and one taxon is highly unlikely to occur
- Bidyadanga – one taxa *Tephrosia andrewii* (P3) was recorded and one taxon is considered unlikely to occur
- Djarindjin – six taxa are considered unlikely to occur.

7.1.5 Flora of interest

No collections were made of species considered to be flora of interest from the project areas, such as significant range extensions or collections of taxonomic interest representing potential new species.

7.2 Fauna

7.2.1 Fauna habitats

Three broad fauna habitat types were described and mapped during the field survey as described in Table 23 and shown in Figure 6, Figure 12, Figure 18, Figure 24 (Appendix A). These comprise *Eucalyptus* and *Corymbia* on Pindan red sand, *Corymbia* over *Melaleuca* on silty clay loam on drainage flats/floodplain and *Corymbia* over *Acacia* over tussock grasses over hummock grassland on red brown sandplain. These fauna habitats align with the mapped vegetation types. Fauna habitats covered 23.33 ha and cleared areas 4.07 ha.

The *Eucalyptus* and *Corymbia* on Pindan red sand habitat type is largely homogeneous throughout the Djarindjin, Beagle Bay and Ardyaloon project areas with minor variation in vegetation density across strata. The vegetation condition is considered to be excellent having negligible disturbance of weeds or ground disturbance, with the exception of tracks and

previous soil movement adjacent to the existing power infrastructure. The *Corymbia* over *Melaleuca* on silty loam over clay on drainage flats/floodplain was only recorded in the Beagle Bay project area. The *Corymbia* over *Acacia* over tussock grasses over hummock grassland on red brown sandplain was recorded from the Bidyadanga project area.

There is a low proportion, approximately 5-10 percent of bare ground over most of the survey area due to a high density of ground cover vegetation leaf litter and other fallen dead vegetation. Leaf litter and other ground debris provides habitat and shelter for a range of small terrestrial vertebrates, especially fossorial reptiles. The tall shrubland provides suitable foraging and nesting habitat for a range of shrubland and woodland birds particularly insectivorous and nectar-feeding birds, terrestrial and arboreal reptiles, and large grazing mammals such as Agile Wallaby.

Sparse emergent trees provide some limited tree hollows for nesting and shelter, and there are very few moderate to large fallen logs suitable as shelter or den sites due to the low tree density. Most shelter habitat is in the form of dense shrub foliage and ground leaf litter. There are occasional large termite mounds that provide shelter, breeding sites and food source for a range of reptiles and mammals.

The project areas are part of a larger continuous area of tall shrubland plain and drainage system habitats throughout the surrounding area as it has a high degree of habitat connectivity with surrounding vegetation having similar or better condition vegetation.

Table 23 Fauna habitats types within the survey area

Habitat type	Photograph	Extent within the survey area (ha)
Eucalyptus and *Corymbia* woodland to isolated clumps of trees over tussock grasses and herbs on Pindan red sand loam on low plain. This habitat type generally corresponds with vegetation type VT01. It tends to occur on well draining porous sandy soil. Habitat condition is generally very good to excellent; however some disturbance includes frequent fire, edge effects of weeds from adjacent tracks and clearings, and dumped rubbish. This habitat is extensive and widespread within the Pindanland bioregion of the Dampier Peninsular and occurs within Ardyaloon, Djarindjin and Beagle Bay survey areas. It is foraging and nesting habitat for a diverse range of insectivorous, nectar and granivore bird species including common resident and nomadic woodland bird species such as DollarBird. Rainbow Bee-eater, Little Friarbird, Peaceful Dove, Grey-crowned Babbler and Double-barred Finch. A range of reptiles utilise this habitat including arboreal species: Stimson's Python, Black-tailed Monitor, and Tree Dtella. Borrowing and fossorial reptiles include Griffin's Slider, Dampierland Limbless Slider and Gould's Monitor. **Conservation significant fauna** Foraging habitat Gouldian Finch (*Erythrura gouldiae*), Foraging and nesting habitat for Peregrine Falcon (*Falco peregrinus*), habitat for Dampierland Burrowing snake (*Simoselaps minimus*), and Dampierland plain slider (*Lerista separanda)* and Greater Bilby (*Macrotis lagotis*) **Habitat value** High value		18.29 ha (Djarindjin, Beagle Bay and Ardyaloon)

Habitat type	Photograph	Extent within the survey area (ha)
Corymbia isolated clumps of trees over *Melaleuca* open woodland over mixed sedges and herbs on silty loam over clay on drainage flats/floodplain This habitat tyre generally corresponds with vegetation type VT02. Habitat condition is generally very good to excellent; however some disturbance includes frequent fire, dumped rubbish, and ground disturbance from adjacent infrastructure. This habitat is restricted to the Beagle Bay survey area in the eastern portion that encroaches into poor-draining lower elevation floodplain. It is foraging and nesting habitat for a diverse range of insectivorous, nectar and granivore bird species including common resident woodland bird species such as Black-faced Cuckoo-shrike, Blue-winged Kookaburra, Collared Sparrowhawk, Long-tailed Finch, and Sacred Kingfisher. A range of frogs and reptiles utilise this habitat including. Desert Tree Frog, Greet Tree Frog, Ornate Burrowing Frog, Long-snouted Water Dragon and Plains Ctenotus (Skink). **Conservation significant fauna** Foraging habitat for Gouldian Finch (*Erythrura gouldiae*), Peregrine Falcon (*Falco peregrinus*), Dampierland Burrowing snake (*Simoselaps minimus*), Dampierland plain slider (*Lerista separanda)* and Greater Bilby (*Macrotis lagotis*) **Habitat value** High value		3.21 ha (Beagle Bay)

Habitat type	Photograph	Extent within the survey area (ha)
Corymbia open woodland over *Acacia* shrubs over tussock grasses over Triodia hummock grassland over herbs on red brown sandplain. This habitat tyre generally corresponds with vegetation type VT03. Habitat condition ranges from good to very good with some cleared areas. Disturbance includes weed invasion, dumped rubbish, ground disturbance, cattle grazing and recent fire (0-2 years). Soils are moderately well drained sandy clay. This habitat is restricted to the Bidyadanga survey area where it extends throughout. It is foraging habitat for a diverse range of regionally widespread and common bird species such as Australian Bustard, Brown Falcon, Red-browed Pardalote, and Variegated Fairy-wren. Budgerigar, Several large termite mounds within the survey area provide sheltering habitat for many reptile species **Conservation significant fauna** Nil **Habitat value** Moderate value		1.83 ha (Bidyadanga)

7.2.2 Fauna diversity

A total of 47 fauna species were recorded within the survey area, including 33 birds, five mammals and nine reptiles. Most species recorded were opportunistic observations of active fauna or bird calls identified while traversing the project areas during targeted fauna search. All fauna species recorded are generally widespread and abundant within habitat of the local area and wider region. Three introduced fauna species were recorded including Cattle (*Bos taurus*) from old scat, Dog (*Canus domesticus*) and Feral Cat (*Felis catus*). A list of fauna species identified during the field survey is provided in Appendix E.

7.2.3 Conservation significant fauna

No conservation listed species were recorded during the survey.

Targeted survey for Greater Bilby (Macrotis lagotis)

No evidence of Greater Bilby activity (footprints, foraging holes, burrows of scat) was recorded within the project areas. The targeted Bilby survey assessed three plots. The results of the data collected is presented in Appendix E as a composite summary. The method allows for assessment of each transect/plots trackability of Bilby as well as plot ODS (other determining signs). For plot trackability the mean score was 3.5. This equates to a moderately high degree of difficulty in the detectability of the bilby within the plots and transects.

Likelihood of occurrence

A likelihood of occurrence assessment was conducted for significant fauna species identified in the desktop assessment. This assessment was based on species biology, habitat requirements, the likely quality and availability of suitable habitat (based on vegetation types present within the survey area) and records of the species in the vicinity. No assumptions were made on the transient potential of these species. The complete likelihood assessment is provided in Appendix E.

Of the identified conservation listed fauna species for the project areas the following assessment on likelihood post-survey is as follows:

- Ardyaloon – Gouldian Finch (*Erythrura gouldiae*) (P4), Peregrine Falcon (*Falco peregrinus*) (S), Dampierland Burrowing snake (*Simoselaps minimus*) (P2), Dampierland plain slider (*Lerista separanda)* (P2) and Greater Bilby (*Macrotis lagotis*) (V) are likely to occur, 13 unlikely to occur and 31 highly unlikely to occur
- Beagle Bay – Gouldian Finch (*Erythrura gouldiae*) (P4), Peregrine Falcon (*Falco peregrinus*) (S), and Greater Bilby (*Macrotis lagotis*) (V) are likely to occur, 15 unlikely to occur and six highly unlikely to occur
- Bidyadanga – 34 species are considered unlikely to occur and 15 highly unlikely to occur
- Djarindjijn – Gouldian Finch (*Erythrura gouldiae*) (P4), Peregrine Falcon (*Falco peregrinus*) (S), Dampierland Burrowing snake (*Simoselaps minimus*) (P4), Dampierland plain slider (*Lerista separanda)* (P2) and Greater Bilby (*Macrotis lagotis*) (V) are likely to occur, 13 unlikely to occur and 30 highly unlikely to occur.

The likelihood of occurrence assessment identified other fauna species of conservation significance could occasionally occur within the habitats of the survey area (e.g. species deemed unlikely). However, it is considered unlikely the survey area provides important habitat (e.g. breeding habitat or key foraging habitat) for any of these species and that these other species may occasional use the habitats of the survey area for temporary refuge and dispersal between other areas of habitat.

8. Conclusion/Summary

The proposed development of the centralised solar generation is considered not to have a significant impact on the flora, vegetation and fauna values at a local and regional scale due to the high representation and continuation of vegetation in the region outside of the project areas. No TEC's listed under the EPBC Act or BC Act were identified within the project areas during the field survey. VT02 within the Beagle Bay project area represents the PEC Kimberley Vegetation Association 67 and is considered significant.

The project areas are part of a larger continuous area of tall shrubland plain and drainage system habitats throughout the surrounding area as it has a high degree of habitat connectivity with surrounding vegetation having similar or better condition vegetation.

No EPBC Act or BC Act listed flora were recorded from the project areas. A tentative record of the Priority three (P3) taxa *Triodia ?acutispicula* was recorded within the Ardyaloon project area This species was recorded with a cover of 20%. The Priority three taxa *Tephrosia andrewii* was recorded within the Bidyadanga project area. A total of two individuals were recorded from one location.

No conservation listed fauna species were recorded during the survey. No evidence of Greater Bilby activity (footprints, foraging holes, burrows of scat) was recorded within the project areas.

Of the identified conservation listed fauna species for the project areas the following species are considered likely to occur:

- Ardyaloon – Gouldian Finch (*Erythrura gouldiae*) (P4), Peregrine Falcon (*Falco peregrinus*) (S), Dampierland Burrowing snake (*Simoselaps minimus*) (P2), Dampierland plain slider (*Lerista separanda)* (P2) and Greater Bilby (*Macrotis lagotis*) (V)
- Beagle Bay – Gouldian Finch (*Erythrura gouldiae*) (P4), Peregrine Falcon (*Falco peregrinus*) (S), and Greater Bilby (*Macrotis lagotis*) (V)
- Djarindjijn – Gouldian Finch (*Erythrura gouldiae*) (P4), Peregrine Falcon (*Falco peregrinus*) (S), Dampierland Burrowing snake (*Simoselaps minimus*) (P4), Dampierland plain slider (*Lerista separanda)* (P2) and Greater Bilby (*Macrotis lagotis*) (V)
- Bidyadanga – no conservation listed fauna species are considered likely to occur.

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Appendices

Appendix A Figures

Paper Size ISO A3

0 2 4 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

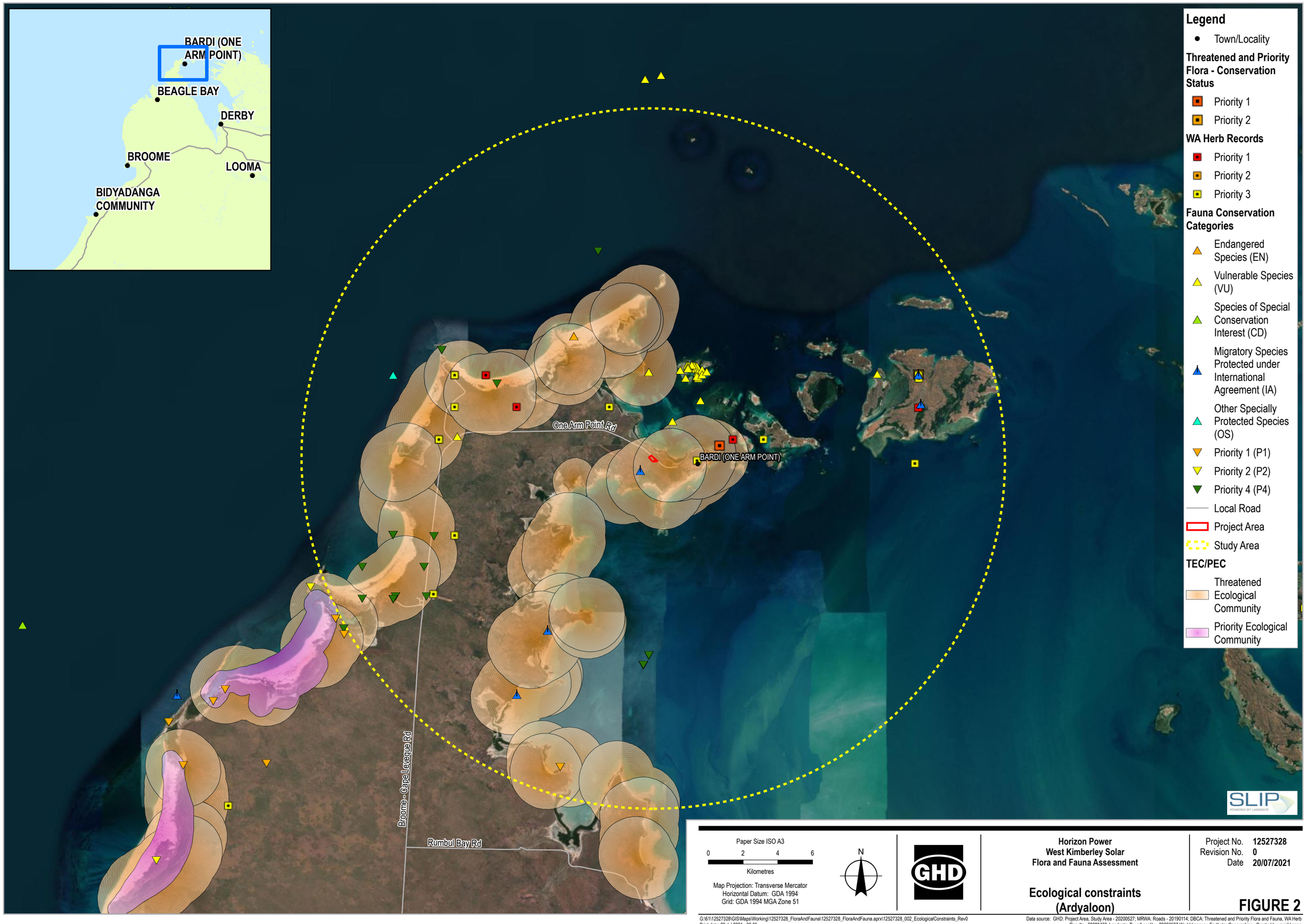
Study and project area boundary (Ardyaloon)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 1

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_001_StudyArea_Rev0
Print date: 19 Jul 2021 - 14:42

Data source: World Imagery: Earthstar Geographics. GHD: Study Area - 20200527, Project Area - 20200527. Created by: mmikkonen



Paper Size ISO A3

0 2 4 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Ecological constraints (Ardyaloon)

Project No. **12527328**
Revision No. **0**
Date **20/07/2021**

FIGURE 2

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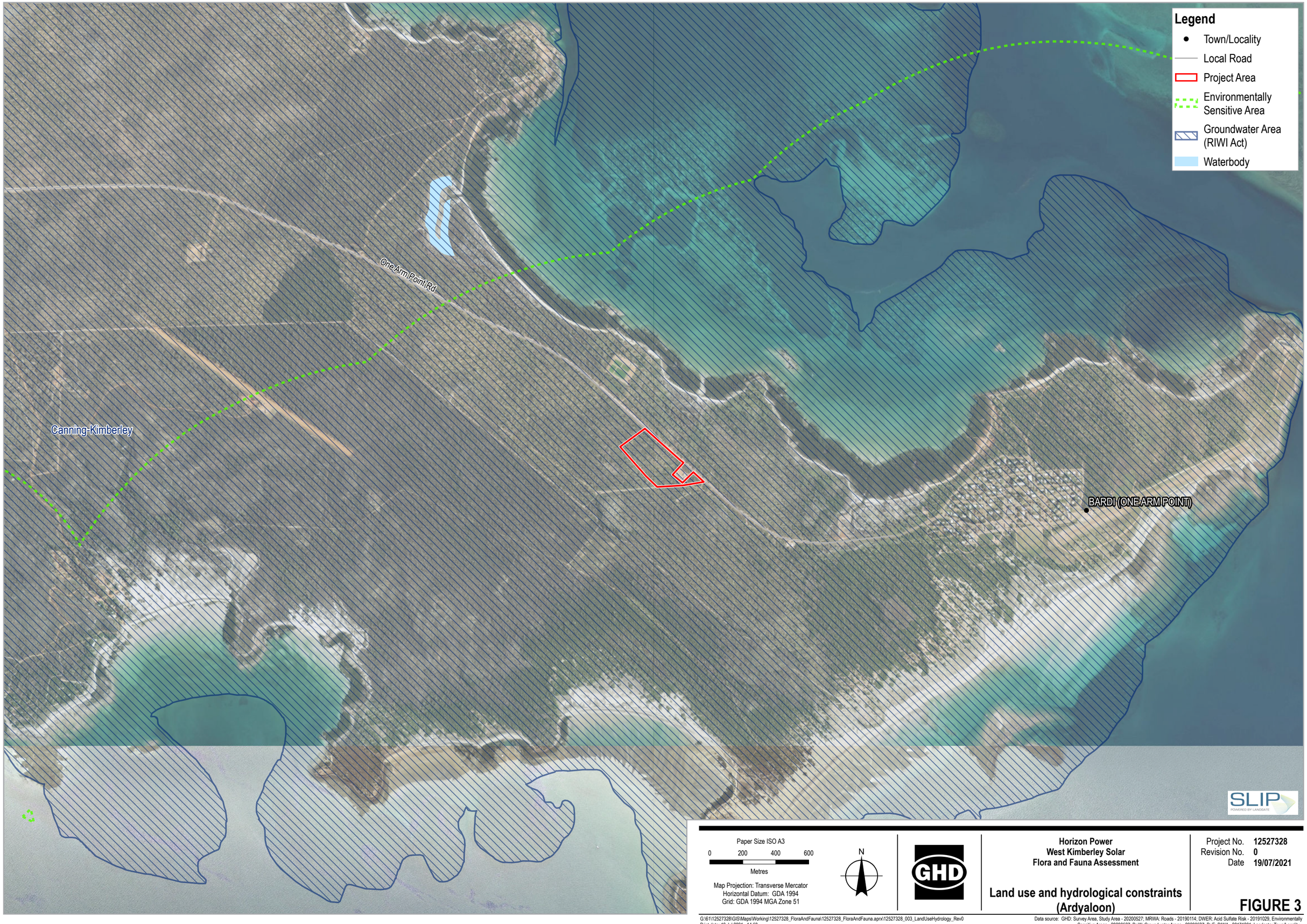
Print date: 20 Jul 2021 - 09:05

Data source: GHD: Project Area, Study Area - 20200527; MRWA: Roads - 20190114; DBCA: Threatened and Priority Flora and Fauna, WA Herb Results - 20200430; Landgate: Town/Locality - 20200527,World Imagery: Earthstar Geographics. Created by: mmikkonen



Paper Size ISO A3

0 200 400 600

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Land use and hydrological constraints (Ardyaloon)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 3

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_003_LandUseHydrology_Rev0
Print date: 19 Jul 2021 - 14:58

Data source: GHD: Survey Area, Study Area - 20200527; MRWA: Roads - 20190114; DWER: Acid Sulfate Risk - 20191029, Environmentally Sensitive Areas - 20200527; DoW: Groundwater Areas - 20200527; DoE: DIWA - 20171201; Landgate: Town/Locality - 20200527,Landgate_Subscription_Imagery\WANow: Landgate / SLIP. Created by: mmikkonen

Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Sample locations and tracks (Ardyaloon)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 4

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Print date: 19 Jul 2021 - 15:02

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506.
Created by: nmikkonen

Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Vegetation types, condition and conservation listed flora (Ardyaloon)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 5

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_005_VegTypeCondition_Rev0
Print date: 19 Jul 2021 - 15:15

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506. Created by: mmikkonen

Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

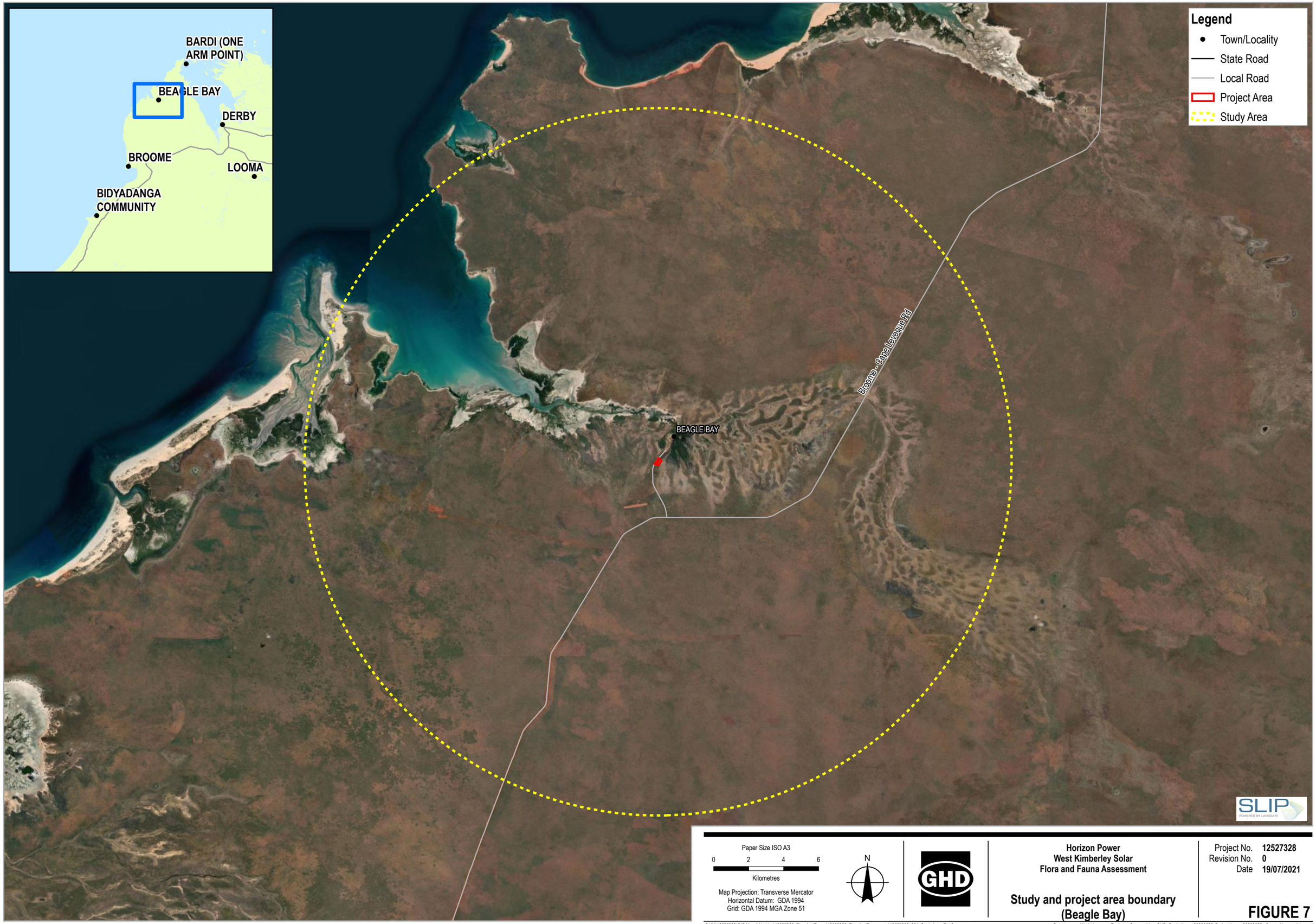
Fauna habitats (Ardyaloon)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 6

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_006_FaunaHabitats_Rev0
Print date: 19 Jul 2021 - 15:24

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506. Created by: mmikkonen



Paper Size ISO A3

0 2 4 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

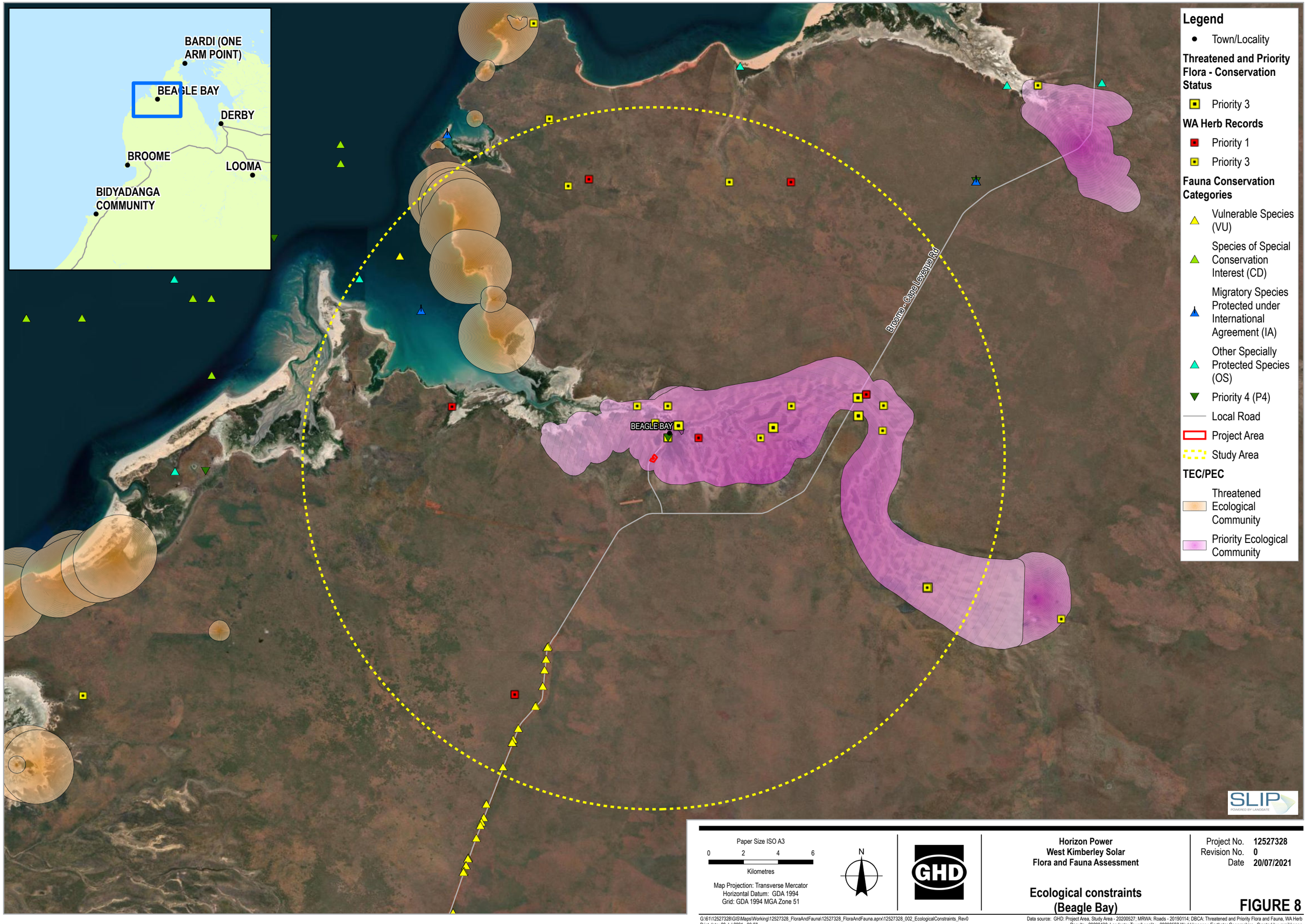
Study and project area boundary (Beagle Bay)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 7

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_001_StudyArea_Rev0
Print date: 19 Jul 2021 - 15:32

Data source: World Imagery: Earthstar Geographics. GHD: Study Area - 20200527, Project Area - 20200527. Created by: mmikkonen



Paper Size ISO A3

0 2 4 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

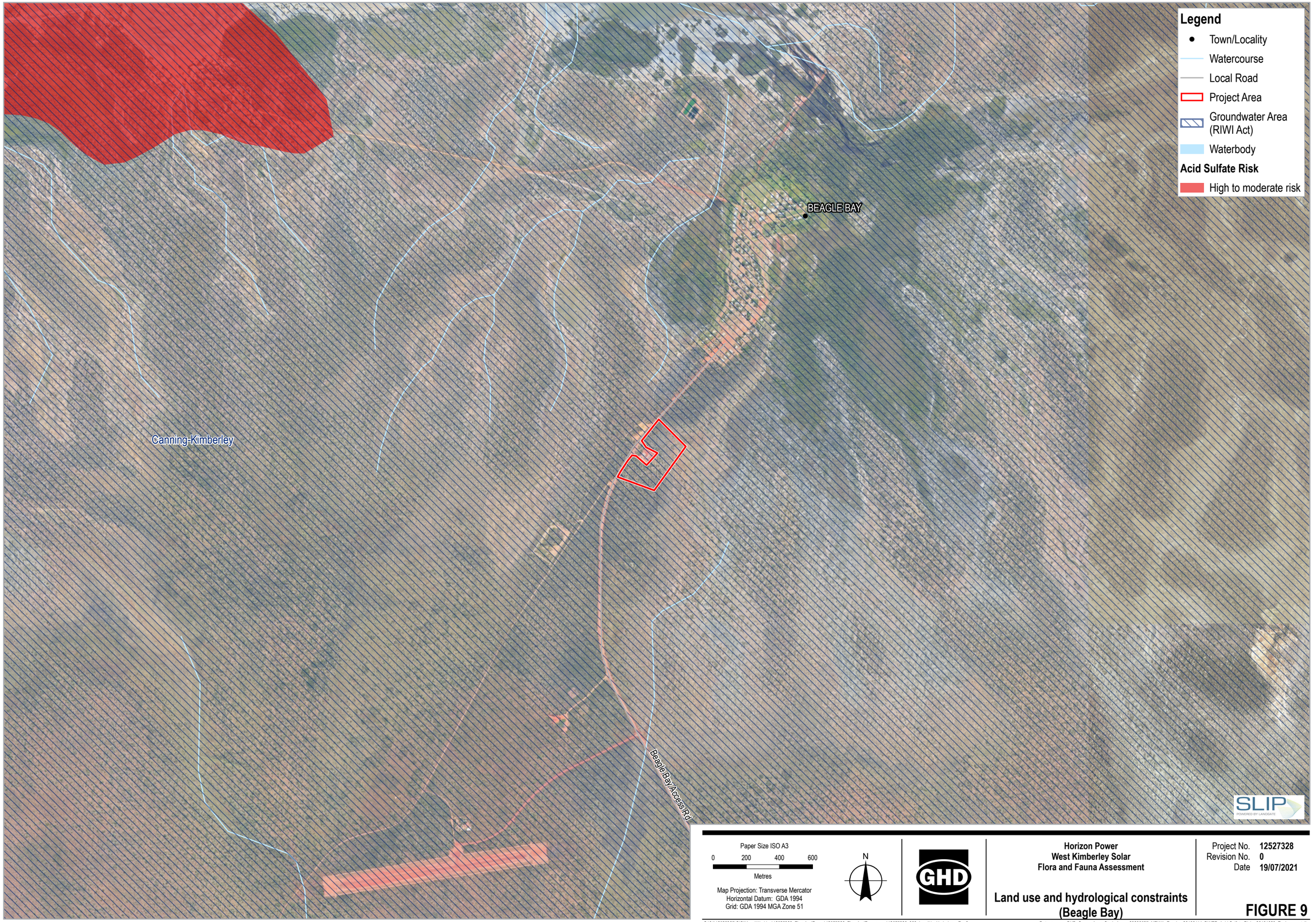
Ecological constraints (Beagle Bay)

Project No. **12527328**
Revision No. **0**
Date **20/07/2021**

FIGURE 8

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_002_EcologicalConstraints_Rev0
Print date: 20 Jul 2021 - 09:07

Data source: GHD: Project Area, Study Area - 20200527; MRWA: Roads - 20190114; DBCA: Threatened and Priority Flora and Fauna, WA Herb Results - 20200430; Landgate: Town/Locality - 20200527,World Imagery: Earthstar Geographics. Created by: mmikkonen



Paper Size ISO A3

0 200 400 600

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Land use and hydrological constraints (Beagle Bay)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 9

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_003_LandUseHydrology_Rev0
Print date: 19 Jul 2021 - 15:37

Data source: GHD: Survey Area, Study Area - 20200527; MRWA: Roads - 20190114; DWER: Acid Sulfate Risk - 20191029, Environmentally Sensitive Areas - 20200527; DoW: Groundwater Areas - 20200527; DoE: DIWA - 20171201; Landgate: Town/Locality - 20200527,Landgate_Subscription_Imagery\WANow: Landgate / SLIP. Created by: mmikkonen

Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

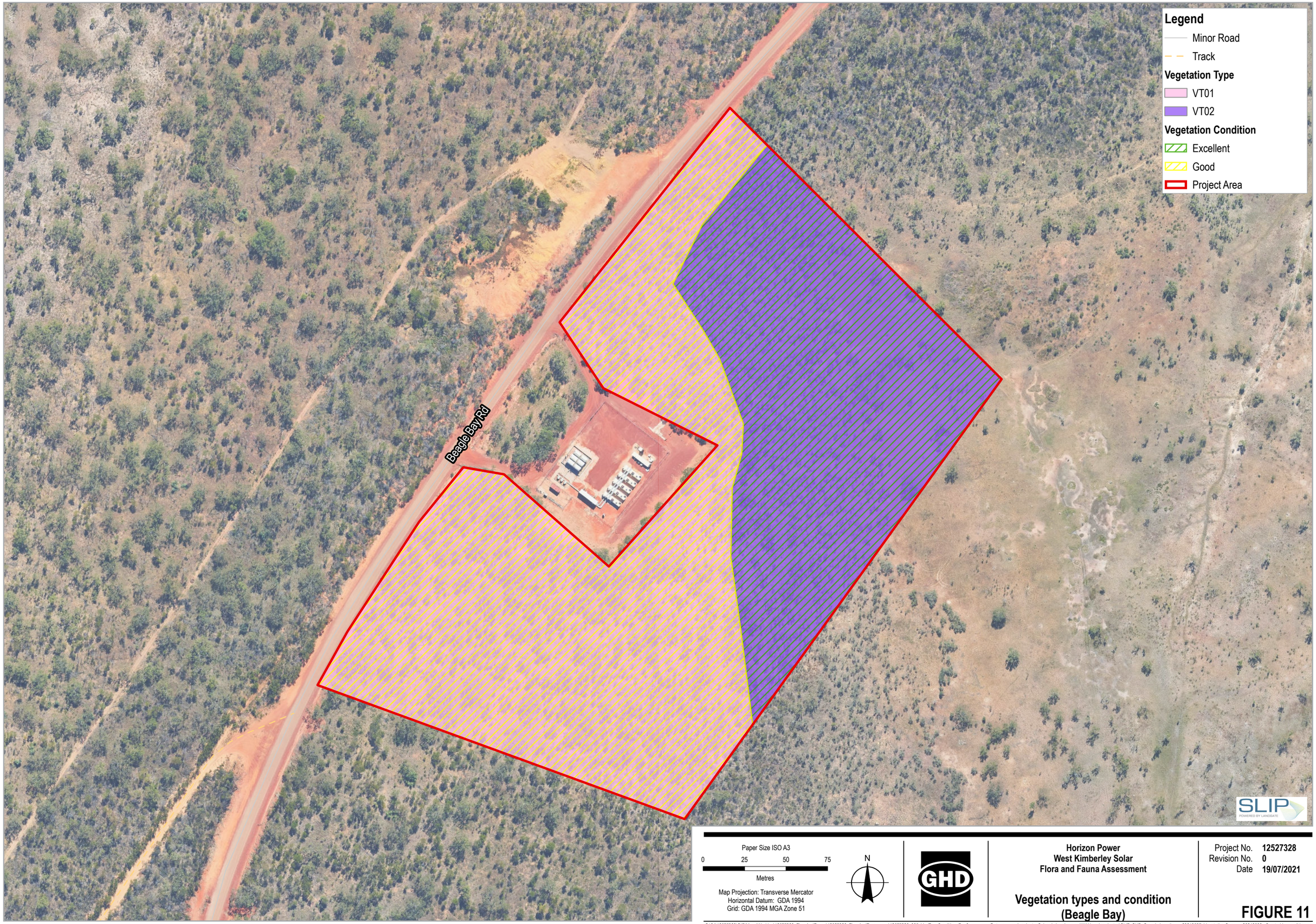
Sample locations and tracks (Beagle Bay)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 10

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_004_SampleLocsTracks_Rev0
Print date: 19 Jul 2021 - 15:42

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506.
Created by: mmikkonen



Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Vegetation types and condition (Beagle Bay)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 11

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_005_VegTypeCondition_Rev0
Print date: 19 Jul 2021 - 15:45

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506. Created by: mmikkonen

Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Fauna habitats
(Beagle Bay)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 12

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_006_FaunaHabitats_Rev0
Print date: 19 Jul 2021 - 15:47

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506. Created by: mmikkonen

Paper Size ISO A3

0 2 4 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

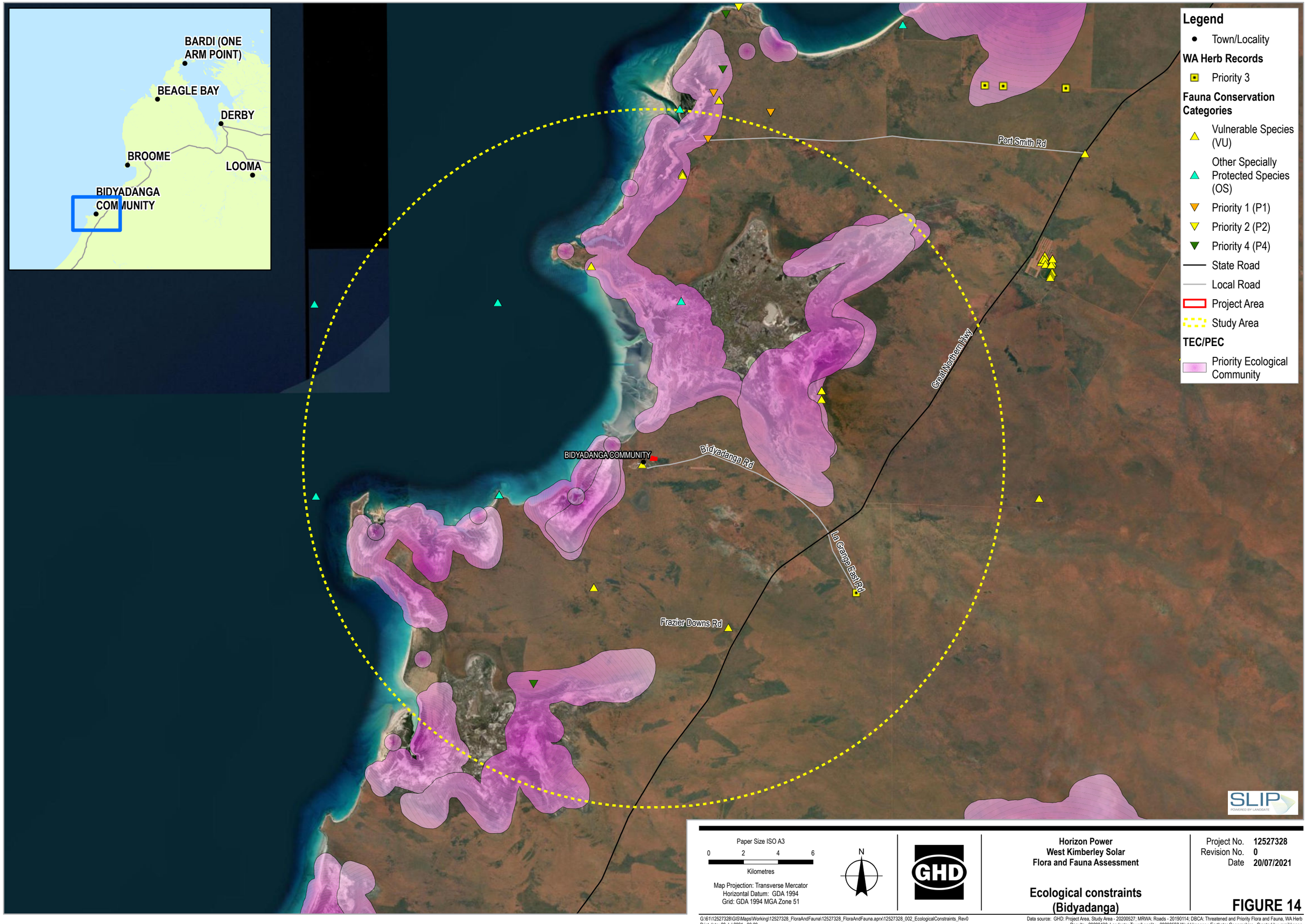
Study and project area boundary (Bidyadanga)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 13

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_001_StudyArea_Rev0
Print date: 19 Jul 2021 - 15:49

Data source: World Imagery: Earthstar Geographics. GHD: Study Area - 20200527, Project Area - 20200527. Created by: mmikkonen



Paper Size ISO A3

0 2 4 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Project No. **12527328**
Revision No. **0**
Date **20/07/2021**

Ecological constraints (Bidyadanga)

FIGURE 14

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_002_EcologicalConstraints_Rev0
Print date: 20 Jul 2021 - 09:09

Data source: GHD: Project Area, Study Area - 20200527; MRWA: Roads - 20190114; DBCA: Threatened and Priority Flora and Fauna, WA Herb Results - 20200430; Landgate: Town/Locality - 20200527,World Imagery: Earthstar Geographics. Created by: mmikkonen

Paper Size ISO A3

0 200 400 600

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

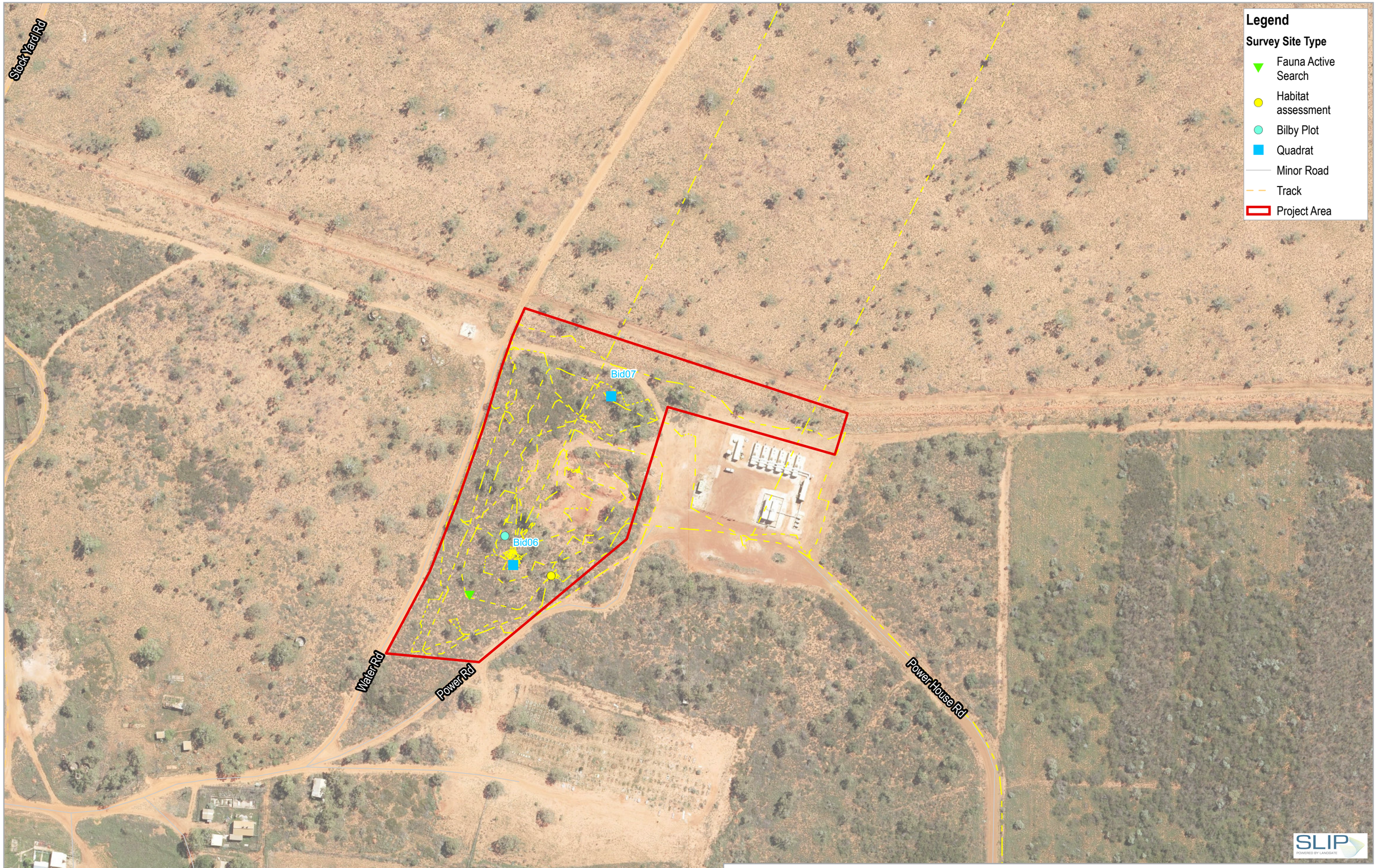
Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

Land use and hydrological constraints (Bidyadanga)

FIGURE 15

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_003_LandUseHydrology_Rev0
Print date: 19 Jul 2021 - 16:28

Data source: GHD: Survey Area, Study Area - 20200527; MRWA: Roads - 20190114; DWER: Acid Sulfate Risk - 20191029, Environmentally Sensitive Areas - 20200527; DoW: Groundwater Areas - 20200527; DoE: DIWA - 20171201; Landgate: Town/Locality - 20200527,Landgate_Subscription_Imagery\WANow: Landgate / SLIP. Created by: mmikkonen



Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

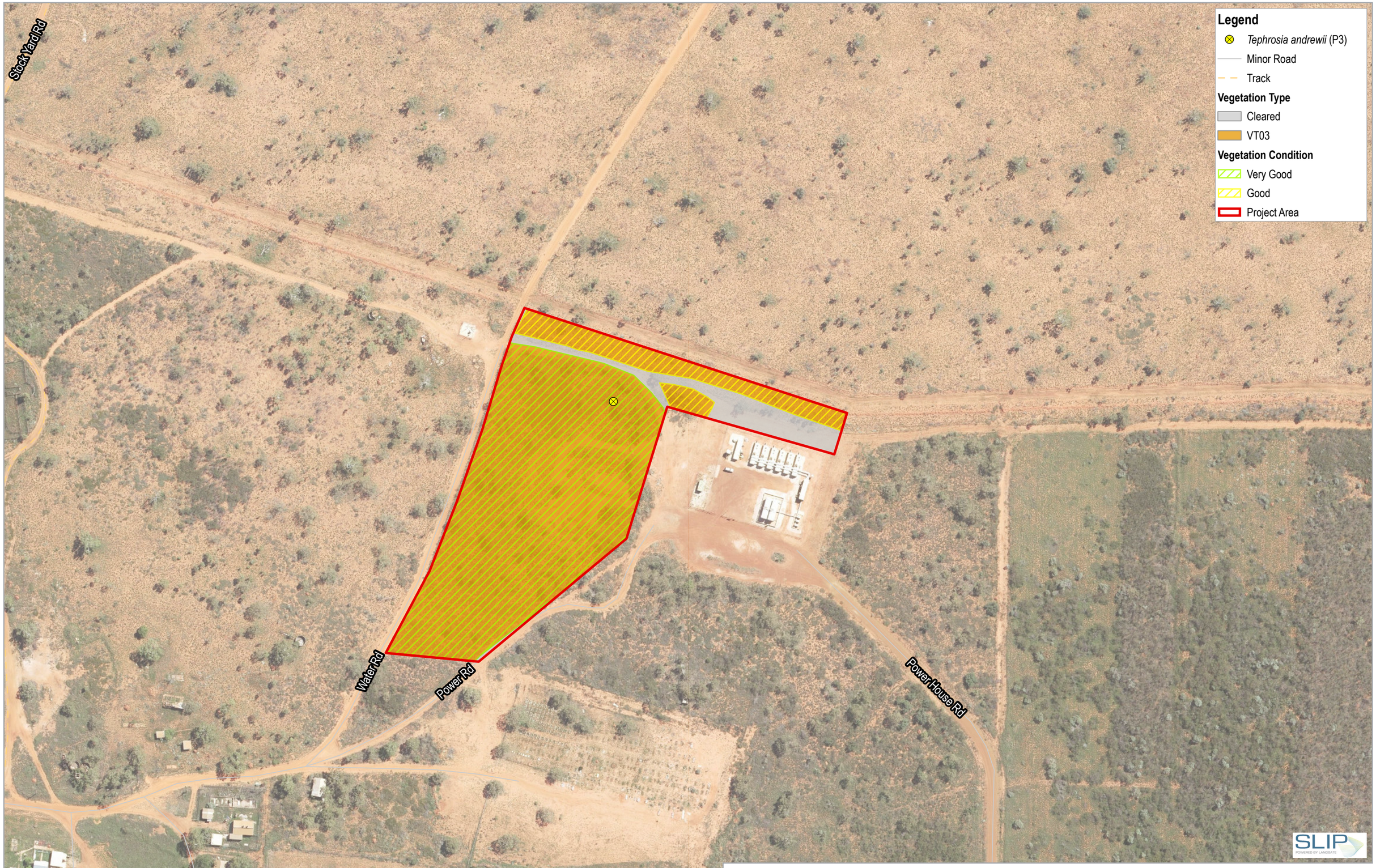
Sample locations and tracks (Bidyadanga)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 16

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_004_SampleLocsTracks_Rev0
Print date: 19 Jul 2021 - 15:58

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506.
Created by: mmikkonen



Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

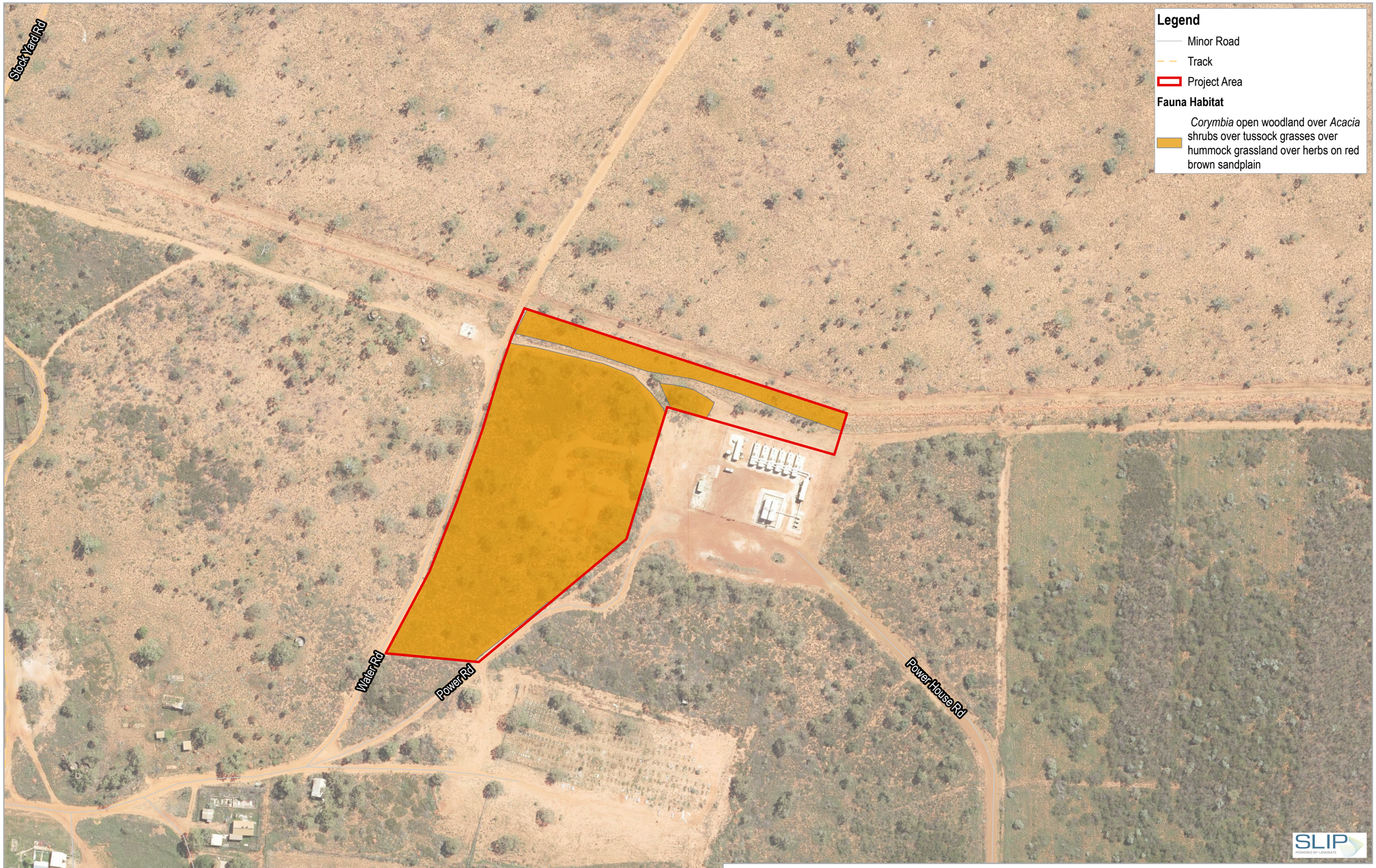
Vegetation types, condition and conservation listed flora (Bidyadanga)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 17

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_005_VegTypeCondition_Rev0
Print date: 19 Jul 2021 - 16:21

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506. Created by: mmikkonen



Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

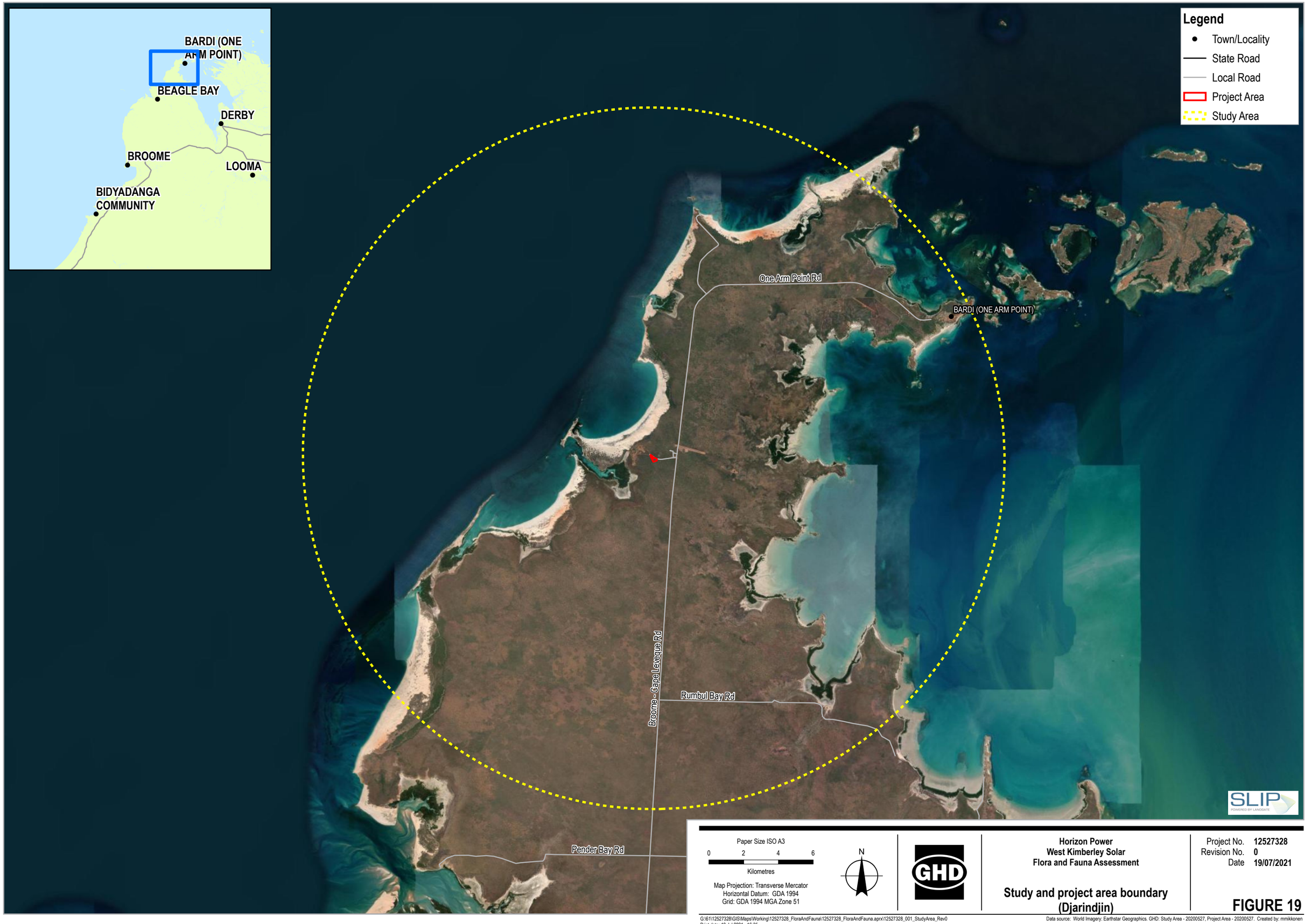
Fauna habitats (Bidyadanga)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 18

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_006_FaunaHabitats_Rev0
Print date: 19 Jul 2021 - 16:30

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506. Created by: mmikkonen



Paper Size ISO A3

0 2 4 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Study and project area boundary (Djarindjin)

Project No. **12527328**
Revision No. **0**
Date **19/07/2021**

FIGURE 19

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_001_StudyArea_Rev0
Print date: 19 Jul 2021 - 16:35

Data source: World Imagery: Earthstar Geographics. GHD: Study Area - 20200527, Project Area - 20200527. Created by: mmikkonen

One Arm Point Rd

BARDI (ONE ARM POINT)

Broome - Cape Leveque Rd

Rumbul Bay Rd

Pender Bay Rd

Legend

- Town/Locality

Threatened and Priority Flora - Conservation Status

- Priority 1
- Priority 2

WA Herb Records

- Priority 1
- Priority 2
- Priority 3

Fauna Conservation Categories

- Endangered Species (EN)
- Vulnerable Species (VU)
- Species of Special Conservation Interest (CD)
- Migratory Species Protected under International Agreement (IA)
- Other Specially Protected Species (OS)
- Priority 1 (P1)
- Priority 2 (P2)
- Priority 4 (P4)
- Local Road
- Project Area
- Study Area

TEC/PEC

- Threatened Ecological Community
- Priority Ecological Community

SLIP POWERED BY LANDGATE

Paper Size ISO A3

0 2 4 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Ecological constraints (Djarindjin)

Project No. **12527328**
Revision No. **0**
Date **20/07/2021**

FIGURE 20

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_002_EcologicalConstraints_Rev0
Print date: 20 Jul 2021 - 09:11

Data source: GHD: Project Area, Study Area - 20200527; MRWA: Roads - 20190114; DBCA: Threatened and Priority Flora and Fauna, WA Herb Results - 20200430; Landgate: Town/Locality - 20200527,World Imagery: Earthstar Geographics. Created by: mmikkonen

Paper Size ISO A3

0 200 400 600

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Project No. **12527328**
Revision No. **0**
Date **20/07/2021**

Land use and hydrological constraints (Djarindjin)

FIGURE 21

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_003_LandUseHydrology_Rev0
Print date: 20 Jul 2021 - 09:48

Data source: GHD: Survey Area, Study Area - 20200527; MRWA: Roads - 20190114; DWER: Acid Sulfate Risk - 20191029, Environmentally Sensitive Areas - 20200527; DoW: Groundwater Areas - 20200527; DoE: DIWA - 20171201; Landgate: Town/Locality - 20200527,Landgate_Subscription_Imagery\WANow: Landgate / SLIP. Created by: mmikkonen

Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Sample locations and tracks (Djarindjin)

Project No. **12527328**
Revision No. **0**
Date **20/07/2021**

FIGURE 22

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_004_SampleLocsTracks_Rev0
Print date: 20 Jul 2021 - 09:55

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506.
Created by: mmikkonen

Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

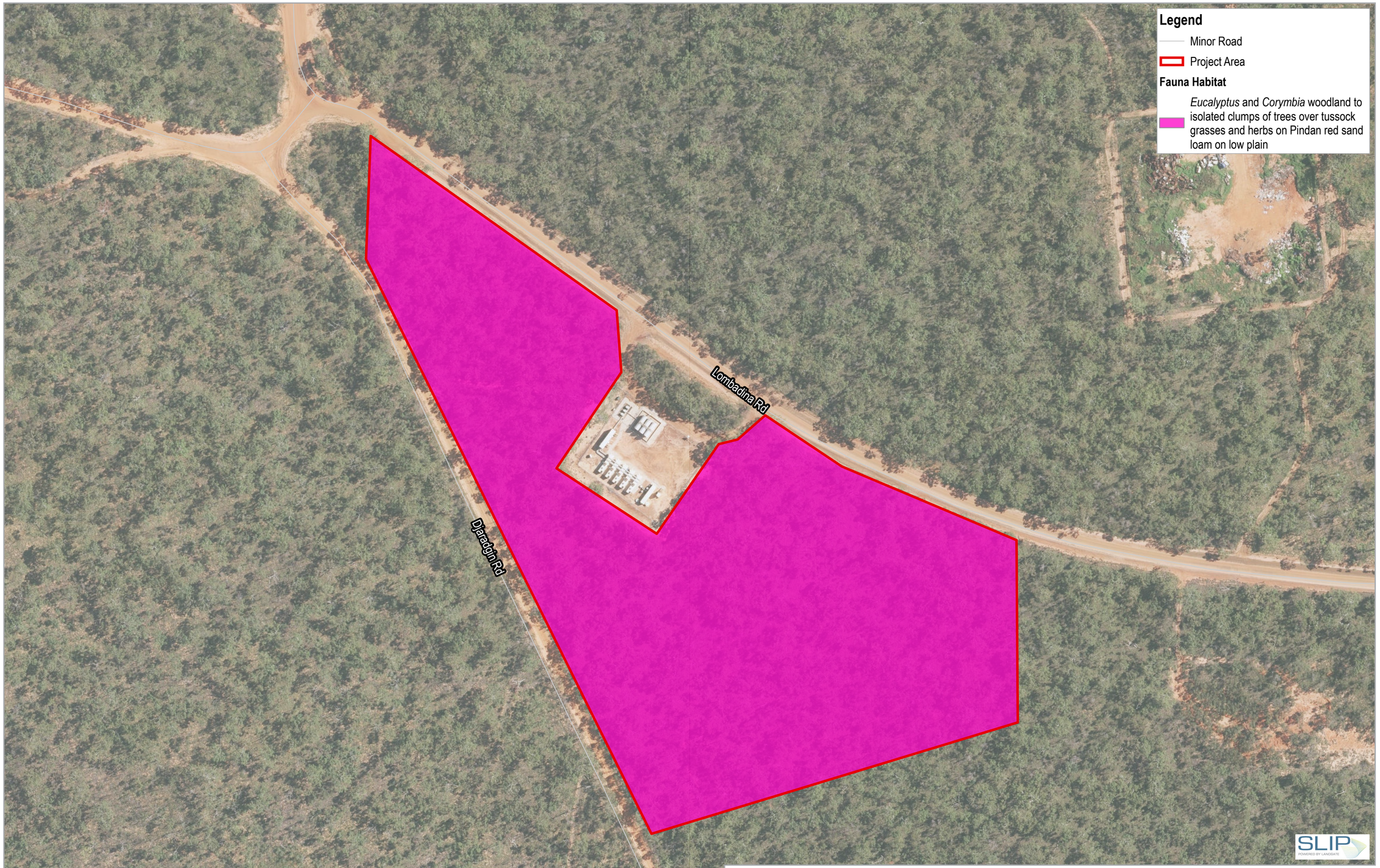
Vegetation types and condition (Djarindjin)

Project No. **12527328**
Revision No. **0**
Date **20/07/2021**

FIGURE 23

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_005_VegTypeCondition_Rev0
Print date: 20 Jul 2021 - 11:00

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506. Created by: mmikkonen



Paper Size ISO A3

0 25 50 75

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 51

N

GHD

Horizon Power
West Kimberley Solar
Flora and Fauna Assessment

Fauna habitats (Djarindjin)

Project No. **12527328**
Revision No. **0**
Date **20/07/2021**

FIGURE 24

G:\61\12527328\GIS\Maps\Working\12527328_FloraAndFauna\12527328_FloraAndFauna.aprx\12527328_006_FaunaHabitats_Rev0
Print date: 20 Jul 2021 - 11:05

Data source: Landgate_Subscription_Imagery\WANow: Landgate / SLIP. GHD: Sample Locations - 20210507, Vegetation Survey - 20210506. Created by: mmikkonen

Appendix B Relevant legislation and background information

Relevant legislation

Federal *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Federal Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, which are defined in the EPBC Act as Matters of National Environmental Significance (MNES).

The biological aspects listed as MNES include:

- Nationally threatened flora and fauna species and ecological communities
- Migratory species

A person must not undertake an action that has, will have, or is likely to have a significant impact (direct or indirect) on MNES, without approval from the Federal Minister for the Environment.

The EPBC Act is administered by the Department of the Environment and Energy (DEE).

State *Environmental Protection Act 1986*

The *Environmental Protection Act 1986* (EP Act) is the primary legislative Act dealing with the protection of the environment in Western Australia. The Act allows the Environmental Protection Authority (EPA), to prevent, control and abate pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment and for matters incidental to or connected with the foregoing. Part IV of the EP Act is administered by the EPA and makes provisions for the EPA to undertake environmental impact assessment of significant proposals, strategic proposals and land use planning schemes.

The Department of Water and Environment Regulation (DWER) is responsible for administering the clearing provisions of the EP Act (Part V). Clearing of native vegetation in Western Australia requires a permit from the DWER, unless exemptions apply. Applications for clearing permits are assessed by the Department and decisions are made to grant or refuse the application in accordance with the Act. When making a decision the assessment considers clearing against the ten clearing principles as specified in Schedule 5 of the EP Act:

a) Native vegetation should not be cleared if it comprises a high level of biodiversity.

b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significance habitat for fauna indigenous to Western Australia.

c) Native vegetation should not be cleared if it includes, or is necessary, for the continued existence of rare flora.

d) Native vegetation should not be cleared if it comprises the whole or part of native vegetation in an area that has been extensively cleared.

e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

g) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

h) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Exemptions for clearing include clearing that is a requirement of a written law or authorised under certain statutory processes (listed in Schedule 6 of the EP Act) and exemptions for prescribed low impact day-to-day activities (prescribed in the Environmental Protection (Clearing of Native Vegetation) Regulations 2004); these exemptions do not apply in environmentally sensitive areas (ESAs).

State *Biodiversity and Conservation Act 2016*

The *Biodiversity Conservation Act 2016* (BC Act) provides for the conservation and protection of biodiversity and biodiversity components, as well as the promotion of the ecologically sustainable use of biodiversity components in Western Australia. The BC Act replaces both the repealed *Wildlife Conservation Act 1950* (WC Act) and the *Sandalwood Act 1929* (Sandalwood Act), as well as their associated regulations. To attain the objectives of the BC Act, principles of ecological sustainable development have been established:

- Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations
- If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations
- The conservation of biodiversity and ecological integrity should be a fundamental consideration indecision-making
- Improved valuation, pricing and incentive mechanisms should be promoted.

The BC Act is administered by the Department of Biodiversity Conservation and Attractions (DBCA).

State *Biosecurity and Agriculture Management Act 2007*

The *Biosecurity and Agriculture Management Act 2007* (BAM Act) and associated regulations are administered by the Department of Primary Industries and Regional Development (DPIRD) and replace the repealed *Agriculture and Related Resources Protection Act 1976.* The main purposes of the BAM Act and its regulations are to:

- Prevent new animal and plant pests (vermin and weeds) and diseases from entering WA
- Manage the impact and spread of those pests already present in the state
- Safely manage the use of agricultural and veterinary chemicals
- Increased control over the sale of agricultural products that contain violative chemical residues.

The Western Australian Organism List (WAOL) provides the status of organisms which have been categorised under the BAM Act. A Declared Pest is a prohibited organism or an organism for which a declaration under Section 22(2) of the Act is in force. Declared Pests may be assigned a control category including: C1 (exclusion), C2 (eradication) and C3 (management). The category may apply to the whole of the State, LGAs, districts, individual properties or even paddocks, and all landholders are obliged to comply with the specific category of control. Categories of control are defined below.

DPIRD Categories for Declared Pests under the BAM Act

Control class code	Description
C1 (Exclusion)	Pests will be assigned to this category if they are not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.
C2 (Eradication)	Pests will be assigned to this category if they are present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.
C3 (Management)	Pests will be assigned to this category if they are established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.

Background information

Environmentally Sensitive Areas

Environmentally Sensitive Areas (ESAs) are declared by the Minister for Environment under Section 51B of the EP Act. The Table below outlines the aspects of areas declared as ESA in the Environmental Protection (Environmentally Sensitive Areas) Notice 2005.

Aspects of ESAs

Aspects of Environmentally Sensitive Areas
A declared World Heritage property as defined in Section 13 of the EPBC Act.
An area that is included on the Register of the National Estate (RNE), because of its natural values, under the *Australian Heritage Commission Act 1975* of the Commonwealth (the RNE was closed in 2007 and is no longer a statutory list – all references to the RNE were removed from the EPBC Act on 19 February 2012).
A defined wetland and the area within 50 m of the wetland. Defined wetlands include Ramsar wetlands, conservation category wetlands and nationally important wetlands.
The area covered by vegetation within 50 m of rare flora, to the extent to which the vegetation is continuous with the vegetation in which the rare flora is located.
The area covered by a Threatened Ecological Community.
A Bush Forever Site listed in “Bush Forever” Volumes 1 and 2 (2000), published by the Western Australia Planning Commission, except to the extent to which the site is approved to be developed by the Western Australia Planning Commission.
The areas covered by the *Environmental Protection (Gnangara Mound Crown Land) Policy 1992*.
The areas covered by the *Environmental Protection (Western Swamp Tortoise Habitat) Policy 2002*.
The areas covered by the lakes to which the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* (EPP Lakes) applies.
Protected wetlands as defined in the *Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998*.

Reserves and conservation areas

Department of Biodiversity, Conservation and Attractions managed lands and waters

DBCA manages lands and waters throughout Western Australia to conserve ecosystems and species, and to provide for recreation and appreciation of the natural environment. DBCA managed lands and waters include national parks, conservation parks and reserves, marine parks and reserves, regional parks, nature reserves, State forest and timber reserves. DBCA managed conservation estate, is vested with the Conservation Commission of Western Australia. Access to, or through, some areas of DBCA managed lands may require a permit or could be restricted due to management activities. Proposed land use changes and development proposals that abut DBCA managed lands will generally be referred to DBCA throughout the assessment process.

Wetlands

Wetlands include not only lakes with open water, but areas of seasonally, intermittently or permanently waterlogged soil.

Ramsar Listed Wetlands

The Convention of Wetlands of International Importance was signed in 1971 at the Iranian town of Ramsar. The Convention has since been referred to as the Ramsar Convention. Ramsar Listed wetlands are “sites containing representative, rare or unique wetlands, or wetlands that are important for conserving biological diversity … because of their ecological, botanical, zoological, limnological or hydrological importance” (DEE 2019b). Once a Ramsar Listed Wetland is designated, the country agrees to manage its conservation and ensure its wise use. Under the Convention, wise use is broadly defined as “maintaining the ecological character of a wetland” (DEE 2019b).

Nationally important wetlands

Wetlands of national significance are listed under the Directory of Important Wetlands in Australia. Nationally important wetlands are wetlands which meet at least one of the following criteria (DEE 2019a):

- It is a good example of a wetland type occurring within a biogeographic region in Australia
- It is a wetland which plays an important ecological or hydrological role in the natural functioning of a major wetland system/complex
- It is a wetland which is important as the habitat for animal taxa at a vulnerable stage in their life cycles, or provides a refuge when adverse conditions such as drought prevail
- The wetland supports one percent or more of the national populations of any native plant or animal taxa
- The wetland supports native plant or animal taxa or communities which are considered endangered or vulnerable at the national level
- The wetland is of outstanding historical or cultural significance

Vegetation extent and status

The National Objectives and Targets for Biodiversity Conservation 2001–2005 (Commonwealth of Australia 2001) recognise that the retention of 30 percent or more of the pre-clearing extent of each ecological community is necessary if Australia’s biological diversity is to be protected. This is the threshold level below which species loss appears to accelerate exponentially and loss below this level should not be permitted. This level of recognition is in keeping with the targets recommended in the review of the National Strategy for the Conservation of Australia’s Biological Diversity (ANZECC 2000).

The extent of remnant native vegetation in WA has been assessed by Shepherd et al. (2002) and the GoWA (2018), based on broadscale vegetation association mapping by Beard (various publications). The GoWA produces Statewide Vegetation Statistics Reports that are used for a number of purposes including conservation planning, land use planning and when assessing development applications. The reports are updated at least every two years.

Vegetation condition

The vegetation condition can be assessed in accordance with the vegetation condition rating scale for the Eremaean and Northern Botanical Provinces (EPA 2016a). The scale recognises the intactness of vegetation and consists of six rating levels as outlined below.

Vegetation condition rating scale for the Eremaean and Northern Botanical Provinces

Condition	Eremaean and Northern Botanical Provinces description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very Good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds..
Degraded	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or ‘parkland cleared’ with their flora comprising weed or crop species with isolated native trees or shrubs.

Conservation codes

Species of significant flora, fauna and communities are protected under both Federal and State Acts. The Federal EPBC Act provides a legal framework to protect and manage nationally important flora and communities. The State BC Act is the primary wildlife conservation legislation in Western Australia. Information on the conservation codes is summarised in the following sections.

Ecological communities

Conservation significant communities

Ecological communities are defined as naturally occurring biological assemblages that occur in a particular type of habitat (English and Blyth 1997). Federally listed Threatened Ecological Communities (TECs) are protected under the EPBC Act. The BC Act provides for the Minister to list an ecological community as a TEC (section 27), or as a collapsed ecological community (section 31) statutory listing of State TECs by the Minister. The legislation also describes statutory processes for preparing recovery plans for TECs, the registration of their critical habitat, and penalties for unauthorised modification of TECs.

Possible TECs that do not meet survey criteria are added to the DBCA Priority Ecological Community (PEC) List under Priorities 1, 2 and 3. These are ecological communities that are adequately known; are rare but not threatened, or meet criteria for Near Threatened. PECs that have been recently removed from the threatened list are placed in Priority 4. These ecological communities require regular monitoring. Conservation dependent ecological communities are placed in Priority 5. PECs are not listed under any formal Federal or State legislation, however, may be listed as TECs under the EPBC Act.

Conservation codes and definitions for TECs listed under the EPBC Act and/ or BC Act

Categories	Definition
Federal Government Conservation Categories (EPBC Act)	
Critically Endangered (CR)	An ecological community if, at that time, is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000)
Endangered (EN)	An ecological community if, at that time: A) is not critically endangered; and B) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000)
Vulnerable (VU)	An ecological community if, at that time: A) is not critically endangered or endangered; and B) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000)
Western Australia Conservation Categories (BC Act)	
Threatened Ecological Communities	

Categories	Definition
Critically Endangered (CR)	An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or that was originally of limited distribution and is facing severe modification or destruction throughout its range in the immediate future, or is already severely degraded throughout its range but capable of being substantially restored or rehabilitated.
Endangered (EN)	An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or was originally of limited distribution and is in danger of significant modification throughout its range or severe modification or destruction over most of its range in the near future.
Vulnerable (VU)	An ecological community that has been adequately surveyed and is found to be declining and/or has declined in distribution and/or condition and whose ultimate security has not yet been assured and/or a community that is still widespread but is believed likely to move into a category of higher threat in the near future if threatening processes continue or begin operating throughout its range.
Collapsed ecological communities	
An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time – (a) there is no reasonable doubt that the last occurrence of the ecological community has collapsed); or (b) the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover – (i) its species composition or structure; or (ii) its species composition and structure. Section 33 of the BC Act provides for a collapsed ecological community to be regarded as a threatened ecological community if it is discovered in a state that no longer makes it eligible for listing as a collapsed ecological community.	

Conservation categories and definitions for PECS as listed by the DBCA

Category	Description
Priority 1	Poorly known ecological communities. Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤5 occurrences or a total area of ≤100 ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.
Priority 2	Poorly known ecological communities. Communities that are known from few occurrences with a restricted distribution (generally ≤10 occurrences or a total area of ≤200 ha). At least some occurrences are not believed to be under immediate threat of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.

Category	Description
Priority 3	Poorly known ecological communities. (i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: (ii) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or; (iii) communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, and inappropriate fire regimes. Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.
Priority 4	Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring. (i) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands. (ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. (iii) Ecological communities that have been removed from the list of threatened communities during the past five years.
Priority 5	Conservation Dependent ecological communities. Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Other significant vegetation

Vegetation may be significant for a range of reasons other than a statutory listing. The EPA (2016b) states that significant vegetation may include vegetation that includes the following:

- Restricted distribution
- Degree of historical impact from threatening processes
- Local endemism in restricted habitats
- Novel combinations of taxa
- A role as a refuge
- A role as a key habitat for Threatened species or large population representing a significant proportion of the local to regional total population of a species
- Being representative of a vegetation unit in ‘pristine’ condition in a highly cleared landscape, recently discovered range extensions, or isolated outliers of the main range)
- Being poorly reserved.

This may apply at a number of levels, so the unit may be significant when considered at the fine-scale (intra-locality), intermediate-scale (locality or inter-locality) or broad-scale (local to region).

Flora and fauna

Conservation significant flora and fauna

Species of significant flora are protected under both Federal and State legislation. Any activities that are deemed to have a significant impact on species that are recognised by the EPBC Act, and/or the BC Act can warrant referral to the DEE and/or the EPA.

The Federal conservation level of flora and fauna species and their significance status is assessed under the EPBC Act. The significance levels for flora and fauna used in the EPBC Act align with the International Union for Conservation of Nature (IUCN) Red List criteria, which are internationally recognised as providing best practice for assigning the conservation status of species. The EPBC Act also protects land and migratory species that are listed under International Agreements. The list of migratory species established under section 209 of the EPBC Act comprises:

- Migratory species which are native to Australia and are included in the appendices to the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals Appendices I and II)
- Migratory species included in annexes established under the Japan-Australia Migratory Bird Agreement (JAMBA) and the China–Australia Migratory Bird Agreement (CAMBA)
- Native, migratory species identified in a list established under, or an instrument made under, an international agreement approved by the Minister, such as the republic of Korea–Australia Migratory Bird Agreement (ROKAMBA)

The State conservation level of flora and fauna species and their significance status also follows the IUCN Red List criteria. Under the BC Act flora and fauna can be listed as Threatened, Extinct and as Specially Protected species.

Threatened species are those are species which have been adequately searched for and are deemed to be, in the wild, either rare, under identifiable threat of extinction, or otherwise in need of special protection, and have been gazetted as such. The assessment of the conservation status of Threatened species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria. Specially protected species meet one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as Threatened or Extinct species under the BC Act cannot also be listed as Specially Protected species.

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

For the purposes of this assessment, all species listed under the EPBC Act, BC Act and DBCA Priority species are considered conservation significant.

Conservation categories and definitions for EPBC Act and BC Act listed flora and fauna species

Conservation category	Definition
Threatened species	
Critically Endangered (CR)	Threatened species considered to be “facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines”. Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.
Endangered (EN)	Threatened species considered to be “facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines”. Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines
Vulnerable (VU)	Threatened species considered to be “facing a high risk of extinction in the wild in the medium term future, as determined in accordance with criteria set out in the ministerial guidelines”. Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.
Extinct species	
Extinct (EX)	Species where “there is no reasonable doubt that the last member of the species has died”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).
Extinct in the Wild (EW)	Species that “is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).
Specially protected species	
Migratory (MI)	Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act). Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species

Conservation category	Definition
Species of special conservation interest (conservation dependent fauna) (CD)	Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened.
Other specially protected fauna (OS)	Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Conservation codes for DBCA listed Priority flora and fauna

Priority category	Definition
Priority 1	Poorly-known taxa Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
Priority 2	Poorly-known taxa Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Priority 3	Poorly-known taxa Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
Priority 4	Rare, Near Threatened and other taxa in need of monitoring A. Rare: Taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands. B. Near Threatened. Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. C. Taxa that have been removed from the list of threatened taxa during the past five years for reasons other than taxonomy.

Other significant flora

Flora species, subspecies, varieties, hybrids and ecotypes may be significant for a range of reasons, other than a statutory listing. The EPA (2016b) states that significant flora may include taxa that have:

- A keystone role in a particular habitat for threatened or Priority flora or fauna species, or large populations representing a considerable proportion of the local or regional total population of a species
- Relictual status, being representation of taxonomic or physiognomic groups that no longer occur widely in the broader landscape
- Anomalous features that indicate a potential new discovery
- Being representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range)
- The presence of restricted subspecies, varieties, or naturally occurring hybrids
- Local endemism (a restricted distribution) or association with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems)
- Being poorly reserved

Other significant fauna

Fauna species may be significant for a range of reasons other than those protected by international agreement or treaty, Specially Protected or Priority Fauna. Significant fauna may include short-range endemic species, species that have declining populations or declining distributions, species at the extremes of their range, or isolated outlying populations, or species which may be undescribed (EPA 2010).

Introduced plants (weeds)

Declared Pests

Information on species considered to be Declared Pests is provided under *State Biosecurity and Agriculture Management Act 2007.*

Weeds of National Significance

The spread of weeds across a range of land uses or ecosystems is important in the context of socio-economic and environmental values. The assessment of Weeds of National Significance (WoNS) is based on four major criteria:

- Invasiveness
- Impacts
- Potential for spread
- Socio-economic and environmental values

Australian state and territory governments have identified thirty-two Weeds of National Significance (WoNS); a list of 20 WoNS was endorsed in 1999 and a further 12 were added in 2012.

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Appendix C Desktop searches

NatureMap

PMST

NatureMap
Mapping Western Australia's biodiversity

NatureMap Ardyaloon cs flora Species Report

Created By Guest user on 04/05/2020

Kingdom	Plantae
Conservation Status	Conservation Taxon (T, X, IA, S, P1-P5)
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	123° 02' 19" E,16° 26' 36" S
Buffer	20km
Group By	Family

Family	Species	Records
Apocynaceae	1	2
Fabaceae	3	9
Haemodoraceae	1	1
Lentibulariaceae	1	1
Myrtaceae	1	1
Poaceae	1	4
Stylidiaceae	1	2
Zygophyllaceae	1	1
TOTAL	**10**	**21**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Apocynaceae					
1.	17362	*Parsonsia kimberleyensis*		P1	
Fabaceae					
2.	17573	*Alysicarpus suffruticosus*		P2	
3.	17435	*Cullen candidum*		P1	
4.	20777	*Tephrosia valleculata*		P3	
Haemodoraceae					
5.	45678	*Haemodorum capitatum*		P1	
Lentibulariaceae					
6.	48823	*Utricularia bidentata*		P3	
Myrtaceae					
7.	11425	*Lophostemon grandiflorus subsp. grandiflorus*		P3	
Poaceae					
8.	17888	*Triodia acutispicula*		P3	
Stylidiaceae					
9.	45717	*Stylidium pindanicum (Pindan Triggerplant)*		P3	
Zygophyllaceae					
10.	19138	*Tribulopis sp. Koolan Island (K.F. Kenneally 8278)*		P1	

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

NatureMap
Mapping Western Australia's biodiversity

NatureMap Ardyaloon cs fauna Species Report

Created By Guest user on 04/05/2020

Kingdom	Animalia
Conservation Status	Conservation Taxon (T, X, IA, S, P1-P5)
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	123° 02' 19" E,16° 26' 36" S
Buffer	20km
Group By	Species Group

Species Group	Species	Records
Bird	40	253
Mammal	3	11
Reptile	3	44
TOTAL	**46**	**308**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Bird					
1.	41323	*Actitis hypoleucos (Common Sandpiper)*		IA	
2.	25634	*Anous stolidus (Common Noddy)*		IA	
3.	24505	*Anous stolidus subsp. pileatus (Common Noddy)*		IA	
4.	25554	*Apus pacificus (Fork-tailed Swift, Pacific Swift)*		IA	
5.	25736	*Arenaria interpres (Ruddy Turnstone)*		IA	
6.	24779	*Calidris acuminata (Sharp-tailed Sandpiper)*		IA	
7.	24780	*Calidris alba (Sanderling)*		IA	
8.	24784	*Calidris ferruginea (Curlew Sandpiper)*		T	
9.	24788	*Calidris ruficollis (Red-necked Stint)*		IA	
10.	24790	*Calidris tenuirostris (Great Knot)*		T	
11.	25575	*Charadrius leschenaultii (Greater Sand Plover)*		T	
12.	25576	*Charadrius mongolus (Lesser Sand Plover)*		T	
13.	24632	*Erythrura gouldiae (Gouldian Finch)*		P4	
14.	25624	*Falco peregrinus (Peregrine Falcon)*		S	
15.	24478	*Fregata ariel (Lesser Frigatebird)*		IA	
16.	47954	*Gelochelidon nilotica (Gull-billed Tern)*		IA	
17.	48587	*Hydroprogne caspia (Caspian Tern)*		IA	
18.	30932	*Limosa lapponica (Bar-tailed Godwit)*		IA	
19.	25741	*Limosa limosa (Black-tailed Godwit)*		IA	
20.	24798	*Numenius madagascariensis (Eastern Curlew)*		T	
21.	24799	*Numenius minutus (Little Curlew, Little Whimbrel)*		IA	
22.	25742	*Numenius phaeopus (Whimbrel)*		IA	
23.	41347	*Onychoprion anaethetus (Bridled Tern)*		IA	
24.	48591	*Pandion cristatus (Osprey, Eastern Osprey)*		IA	
25.	24663	*Phaethon rubricauda (Red-tailed Tropicbird)*		P4	
26.	24382	*Pluvialis fulva (Pacific Golden Plover)*		IA	
27.	24383	*Pluvialis squatarola (Grey Plover)*		IA	
28.	25640	*Sterna dougallii (Roseate Tern)*		IA	
29.	24524	*Sterna dougallii subsp. gracilis (Roseate Tern)*		IA	
30.	25642	*Sterna hirundo (Common Tern)*		IA	
31.	24527	*Sterna hirundo subsp. longipennis (Common Tern)*		IA	
32.	48593	*Sternula albifrons (Little Tern)*		IA	
33.	25754	*Sula leucogaster (Brown Booby)*		IA	
34.	24828	*Sula leucogaster subsp. plotus (Brown Booby)*		IA	
35.	48597	*Thalasseus bergii (Crested Tern)*		IA	
36.	24803	*Tringa brevipes (Grey-tailed Tattler)*		P4	
37.	24806	*Tringa glareola (Wood Sandpiper)*		IA	
38.	24808	*Tringa nebularia (Common Greenshank, greenshank)*		IA	

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
39.	24810	*Tringa totanus (Common Redshank, redshank)*		IA	
40.	41351	*Xenus cinereus (Terek Sandpiper)*		IA	
Mammal					
41.	24084	*Dugong dugon (Dugong)*		S	
42.	24168	*Macrotis lagotis (Bilby, Dalgyte, Ninu)*		T	
43.	24060	*Orcaella heinsohni (Australian Snubfin Dolphin)*		P4	
Reptile					
44.	25336	*Chelonia mydas (Green Turtle)*		T	
45.	25343	*Lepidochelys olivacea (Olive Ridley Turtle, Pacific Ridley Turtle)*		T	
46.	25268	*Simoselaps minimus (Dampierland Burrowing Snake)*		P2	

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

Australian Government
Department of the Environment and Energy

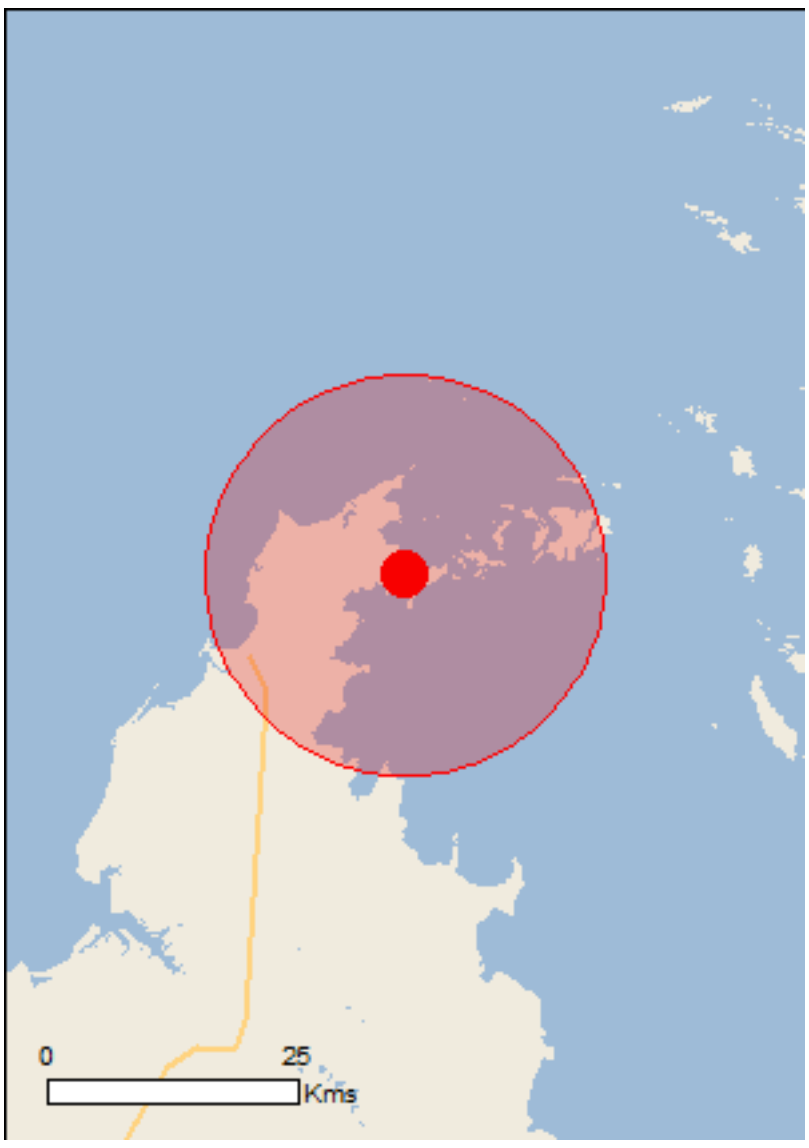
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 05/05/20 15:22:15



Coordinates
Buffer: 20.0Km

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	28
Listed Migratory Species:	48

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	83
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	2

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	9
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties [Resource Information]

Name	State	Status
Natural		
The West Kimberley	WA	Listed place

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name
EEZ and Territorial Sea

Marine Regions [Resource Information]

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name
North-west

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat known to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat may occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Sharks		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Breeding likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area

Name	Status	Type of Presence
Pristis pristis		
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas		
Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Onychoprion anaethetus		
Bridled Tern [82845]		Breeding known to occur within area
Sterna dougallii		
Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons		
Little Tern [82849]		Breeding known to occur within area
Sula sula		
Red-footed Booby [1023]		Breeding known to occur within area
Migratory Marine Species		
Anoxypristis cuspidata		
Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding known to occur within area

Name	Threatened	Type of Presence
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Foraging, feeding or related behaviour known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Thalasseus bergii Crested Tern [83000]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]		
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundo daurica Red-rumped Swallow [59480]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Sterna albifrons Little Tern [813]		Breeding known to occur within area
Sterna anaethetus Bridled Tern [814]		Breeding known to occur within area
Sterna bergii Crested Tern [816]		Breeding known to occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Foraging, feeding or related behaviour likely to occur within area
Reptiles		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Aipysurus tenuis Brown-lined Seasnake [1121]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnston's River Crocodile [1773]		Species or species habitat may occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Black-ringed Seasnake [1100]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Hydrophis mcdowelli null [25926]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [1111]		Species or species habitat may occur within area
Lapemis hardwickii Spine-bellied Seasnake [1113]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Delphinus delphis Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Foraging, feeding or related behaviour known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area

Name	Status	Type of Presence
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks	[Resource Information]
Name	Label
Kimberley	Habitat Protection Zone (IUCN IV)
Kimberley	Multiple Use Zone (IUCN VI)

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Bardi Jawi	WA
Swan Island	WA

Invasive Species	[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat may occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat likely to occur within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat may occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Reptiles		
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake,		Species or species

Name	Status	Type of Presence
Cacing Besi [1258]		habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-16.44446 123.0384

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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NatureMap
Mapping Western Australia's biodiversity

NatureMap Beagle Bay cs flora Species Report

Created By Guest user on 05/05/2020

Kingdom	Plantae
Conservation Status	Conservation Taxon (T, X, IA, S, P1-P5)
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	122° 39' 09" E,16° 59' 39" S
Buffer	20km
Group By	Family

Family	Species	Records
Araceae	1	2
Asteraceae	1	2
Byblidaceae	1	2
Convolvulaceae	1	2
Cyperaceae	1	1
Fabaceae	2	6
Haemodoraceae	1	1
Lentibulariaceae	1	1
Loranthaceae	1	1
Menyanthaceae	1	9
Stylidiaceae	1	2
TOTAL	**12**	**29**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Araceae					
1.	33000	*Colocasia esculenta var. aquatilis*		P3	
Asteraceae					
2.	8246	*Thespidium basiflorum*		P1	
Byblidaceae					
3.	33487	*Byblis guehoi*		P1	Y
Convolvulaceae					
4.	42904	*Ipomoea tolmerana subsp. occidentalis*		P1	
Cyperaceae					
5.	19668	*Cyperus haspan subsp. haspan*		P1	Y
Fabaceae					
6.	14487	*Aphyllodium glossocarpum*		P3	
7.	13829	*Glycine pindanica*		P3	
Haemodoraceae					
8.	45678	*Haemodorum capitatum*		P1	
Lentibulariaceae					
9.	7152	*Utricularia stellaris*		P1	
Loranthaceae					
10.	2394	*Dendrophthoe odontocalyx*		P3	
Menyanthaceae					
11.	6546	*Nymphoides beaglensis*		P3	
Stylidiaceae					
12.	13788	*Stylidium costulatum*		P3	

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3

Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area

4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

NatureMap
Mapping Western Australia's biodiversity

NatureMap Beagle Bay cs fauna Species Report

Created By Guest user on 05/05/2020

Kingdom	Animalia
Conservation Status	Conservation Taxon (T, X, IA, S, P1-P5)
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	122° 39' 09" E,16° 59' 39" S
Buffer	20km
Group By	Species Group

Species Group	Species	Records
Bird	9	12
Fish	1	1
Mammal	3	108
TOTAL	**13**	**121**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Bird					
1.	25554	*Apus pacificus (Fork-tailed Swift, Pacific Swift)*		IA	
2.	24378	*Charadrius veredus (Oriental Plover)*		IA	
3.	24632	*Erythrura gouldiae (Gouldian Finch)*		P4	
4.	25624	*Falco peregrinus (Peregrine Falcon)*		S	
5.	24481	*Glareola maldivarum (Oriental Pratincole)*		IA	
6.	24799	*Numenius minutus (Little Curlew, Little Whimbrel)*		IA	
7.	25640	*Sterna dougallii (Roseate Tern)*		IA	
8.	24803	*Tringa brevipes (Grey-tailed Tattler)*		P4	
9.	24808	*Tringa nebularia (Common Greenshank, greenshank)*		IA	
Fish					
10.	34037	*Pristis zijsron (Green Sawfish)*		T	
Mammal					
11.	24084	*Dugong dugon (Dugong)*		S	
12.	24168	*Macrotis lagotis (Bilby, Dalgyte, Ninu)*		T	
13.	24204	*Vespadelus douglasorum (Yellow-lipped Cave Bat)*		P2	

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

Australian Government
Department of the Environment and Energy

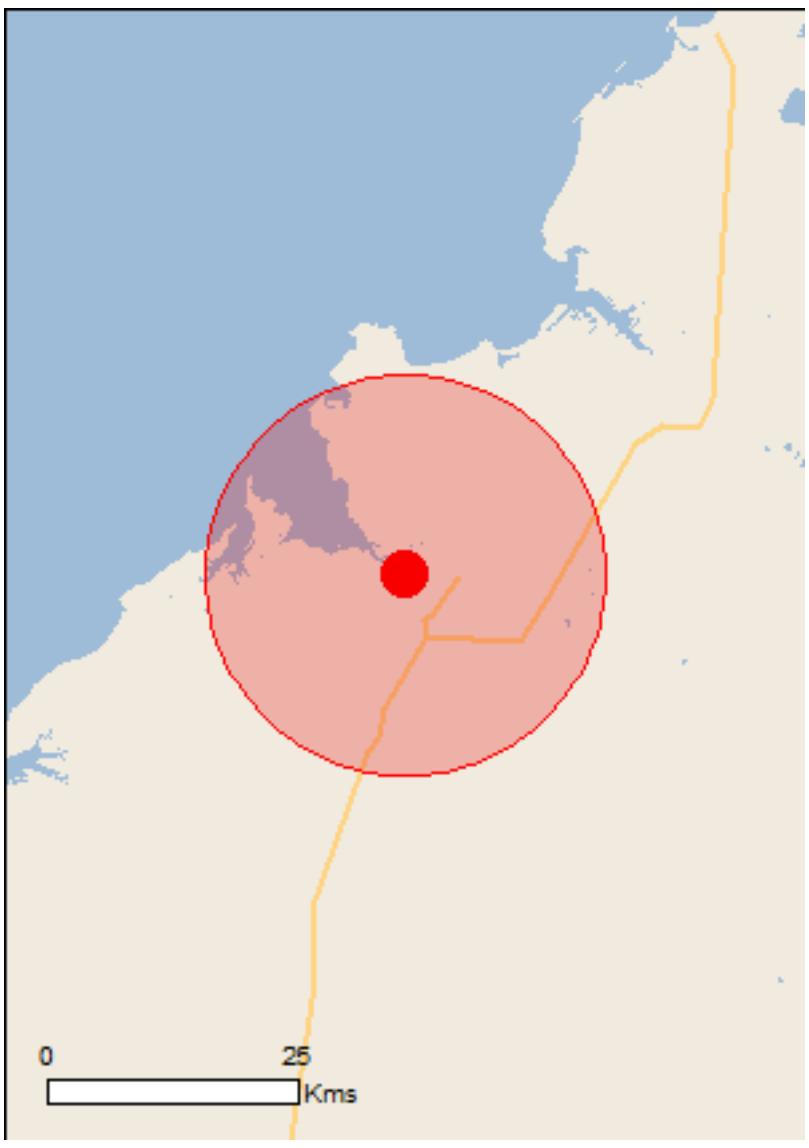
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

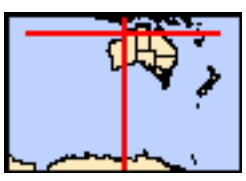
Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 05/05/20 15:23:45



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 20.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	27
Listed Migratory Species:	45

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	82
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	11
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties [Resource Information]

Name	State	Status
Natural		
The West Kimberley	WA	Listed place

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat may occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Sharks		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species	[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.	
Name	Threatened	Type of Presence

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Dugong dugon Dugong [28]		Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray		Species or species habitat may occur within

Name	Threatened	Type of Presence
[84995]		area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni		
Australian Snubfin Dolphin [81322]		Species or species habitat likely to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis		
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis		
Indo-Pacific Humpback Dolphin [50]		Foraging, feeding or related behaviour likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Cecropis daurica		
Red-rumped Swallow [80610]		Species or species habitat may occur within area
Cuculus optatus		
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundo rustica		
Barn Swallow [662]		Species or species habitat likely to occur within area
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum		
Oriental Pratincole [840]		Species or species habitat may occur within area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus		
Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundo daurica Red-rumped Swallow [59480]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna albifrons Little Tern [813]		Breeding known to occur within area
Sterna bengalensis Lesser Crested Tern [815]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Foraging, feeding or related behaviour likely to occur within area
Reptiles		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Aipysurus tenuis Brown-lined Seasnake [1121]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnston's River Crocodile [1773]		Species or species habitat may occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hydrelaps darwiniensis Black-ringed Seasnake [1100]		Species or species habitat may occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Hydrophis mcdowelli null [25926]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [1111]		Species or species habitat may occur within area
Lapemis hardwickii Spine-bellied Seasnake [1113]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Pelamis platurus		
Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Delphinus delphis		
Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus		
Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Orcaella brevirostris		
Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis		
Indo-Pacific Humpback Dolphin [50]		Foraging, feeding or related behaviour likely to occur within area
Stenella attenuata		
Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus		
Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str.		
Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence

Name	Status	Type of Presence
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat may occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat likely to occur within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat may occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Reptiles		
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-16.97912 122.62006

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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NatureMap
Mapping Western Australia's biodiversity

NatureMap Bidyadnga cs fauna Species Report

Created By Guest user on 05/05/2020

Kingdom	Animalia
Conservation Status	Conservation Taxon (T, X, IA, S, P1-P5)
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	121° 47' 02" E,18° 40' 49" S
Buffer	20km
Group By	Species Group

Species Group	Species	Records
Bird	35	118
Mammal	4	23
Reptile	1	3
TOTAL	**40**	**144**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Bird					
1.	41323	*Actitis hypoleucos (Common Sandpiper)*		IA	
2.	25554	*Apus pacificus (Fork-tailed Swift, Pacific Swift)*		IA	
3.	25736	*Arenaria interpres (Ruddy Turnstone)*		IA	
4.	24779	*Calidris acuminata (Sharp-tailed Sandpiper)*		IA	
5.	24780	*Calidris alba (Sanderling)*		IA	
6.	24784	*Calidris ferruginea (Curlew Sandpiper)*		T	
7.	24788	*Calidris ruficollis (Red-necked Stint)*		IA	
8.	24790	*Calidris tenuirostris (Great Knot)*		T	
9.	25575	*Charadrius leschenaultii (Greater Sand Plover)*		T	
10.	25576	*Charadrius mongolus (Lesser Sand Plover)*		T	
11.	24378	*Charadrius veredus (Oriental Plover)*		IA	
12.	24478	*Fregata ariel (Lesser Frigatebird)*		IA	
13.	47954	*Gelochelidon nilotica (Gull-billed Tern)*		IA	
14.	24481	*Glareola maldivarum (Oriental Pratincole)*		IA	
15.	48587	*Hydroprogne caspia (Caspian Tern)*		IA	
16.	25739	*Limicola falcinellus (Broad-billed Sandpiper)*		IA	
17.	30932	*Limosa lapponica (Bar-tailed Godwit)*		IA	
18.	25741	*Limosa limosa (Black-tailed Godwit)*		IA	
19.	24798	*Numenius madagascariensis (Eastern Curlew)*		T	
20.	24799	*Numenius minutus (Little Curlew, Little Whimbrel)*		IA	
21.	25742	*Numenius phaeopus (Whimbrel)*		IA	
22.	24497	*Oceanites oceanicus (Wilson's Storm-petrel)*		IA	
23.	48591	*Pandion cristatus (Osprey, Eastern Osprey)*		IA	
24.	24843	*Plegadis falcinellus (Glossy Ibis)*		IA	
25.	24382	*Pluvialis fulva (Pacific Golden Plover)*		IA	
26.	24383	*Pluvialis squatarola (Grey Plover)*		IA	
27.	24752	*Polytelis alexandrae (Princess Parrot)*		P4	
28.	25642	*Sterna hirundo (Common Tern)*		IA	
29.	48593	*Sternula albifrons (Little Tern)*		IA	
30.	25754	*Sula leucogaster (Brown Booby)*		IA	
31.	48597	*Thalasseus bergii (Crested Tern)*		IA	
32.	24803	*Tringa brevipes (Grey-tailed Tattler)*		P4	
33.	24808	*Tringa nebularia (Common Greenshank, greenshank)*		IA	
34.	24809	*Tringa stagnatilis (Marsh Sandpiper, little greenshank)*		IA	
35.	41351	*Xenus cinereus (Terek Sandpiper)*		IA	
Mammal					
36.	24084	*Dugong dugon (Dugong)*		S	
37.	24150	*Isoodon auratus subsp. auratus (Golden Bandicoot (mainland), Wintarru)*		T	

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
38.	24122	*Lagorchestes conspicillatus subsp. leichardti (Spectacled Hare-wallaby (mainland))*		P4	
39.	24168	*Macrotis lagotis (Bilby, Dalgyte, Ninu)*		T	

Reptile

40.	25024	*Ctenotus angusticeps (Airlie Island Ctenotus, Northwestern coastal Ctenotus)*		P3	

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

NatureMap
Mapping Western Australia's biodiversity

NatureMap Bidyadanga flora Species Report

Created By Guest user on 05/05/2020

Kingdom Plantae
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 121° 47' 02" E,18° 40' 49" S
Buffer 20km
Group By Family

Family	Species	Records
Acanthaceae	1	1
Aizoaceae	3	3
Amaranthaceae	3	4
Anadyomenaceae	1	1
Asteraceae	1	1
Bonnemaisoniaceae	1	1
Boraginaceae	3	4
Caulerpaceae	6	8
Champiaceae	1	1
Chenopodiaceae	2	2
Cleomaceae	2	2
Codiaceae	3	5
Combretaceae	1	1
Corallinaceae	1	1
Cyperaceae	2	2
Dasyaceae	1	1
Dasycladaceae	1	1
Euphorbiaceae	3	3
Fabaceae	22	39
Galaxauraceae	1	1
Goodeniaceae	4	5
Halimedaceae	1	1
Halymeniaceae	1	1
Loranthaceae	2	3
Malvaceae	6	11
Moraceae	1	1
Myrtaceae	3	5
Oleaceae	1	1
Plumbaginaceae	1	1
Poaceae	3	3
Polygalaceae	1	1
Primulaceae	1	1
Proteaceae	4	6
Rhizophoraceae	2	2
Rhizophyllidaceae	1	2
Rhodomelaceae	1	1
Rubiaceae	2	2
Siphonocladaceae	1	1
Solanaceae	2	5
Udoteaceae	1	1
Zygophyllaceae	1	2
TOTAL	**99**	**138**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Acanthaceae					
1.	13959	*Hypoestes floribunda var. varia*			
Aizoaceae					
2.	2818	*Sesuvium portulacastrum*			
3.	44240	*Trianthema cusackianum*			
4.	44360	*Trianthema turgidifolium*			
Amaranthaceae					
5.	2696	*Ptilotus astrolasius*			
6.	2704	*Ptilotus calostachyus (Weeping Mulla Mulla)*			
7.	2751	*Ptilotus polystachyus (Prince of Wales Feather)*			
Anadyomenaceae					
8.	35872	*Anadyomene plicata*			
Asteraceae					
9.	46337	*Bidens subalternans var. subalternans*	Y		

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Bonnemaisoniaceae					
10.	26486	*Asparagopsis taxiformis*			
Boraginaceae					
11.	6707	*Heliotropium curassavicum (Smooth Heliotrope)*			
12.	10992	*Heliotropium glabellum*			
13.	13126	*Heliotropium leptaleum*			
Caulerpaceae					
14.	42620	*Caulerpa chemnitzia*			
15.	35158	*Caulerpa corynephora*			
16.	44547	*Caulerpa lamourouxii*			
17.	26568	*Caulerpa lentillifera*			
18.	26576	*Caulerpa serrulata*			
19.	26577	*Caulerpa sertularioides*			
Champiaceae					
20.	26619	*Champia stipitata*			
Chenopodiaceae					
21.	2511	*Enchylaena tomentosa (Barrier Saltbush)*			
22.	2582	*Rhagodia eremaea (Thorny Saltbush)*			
Cleomaceae					
23.		*Cleome sp.*			
24.	29101	*Cleome uncifera subsp. uncifera*			
Codiaceae					
25.	35917	*Codium arabicum*			
26.	35857	*Codium dwarkense*			
27.	47115	*Codium taylorii*			
Combretaceae					
28.	5306	*Terminalia hadleyana*			
Corallinaceae					
29.	26462	*Amphiroa fragilissima*			
Cyperaceae					
30.	777	*Cyperus bulbosus (Bush Onion, Tjanmata)*			
31.	989	*Schoenus falcatus*			
Dasyaceae					
32.	26930	*Heterosiphonia crassipes*			
Dasycladaceae					
33.	44548	*Neomeris bilimbata*			
Euphorbiaceae					
34.	4623	*Euphorbia coghlanii (Namana)*			
35.	13281	*Euphorbia vaccaria*			
36.	4658	*Mallotus nesophilus*			
Fabaceae					
37.	16160	*Acacia adoxa var. subglabra*			
38.	3214	*Acacia ancistrocarpa (Fitzroy Wattle)*			
39.	3241	*Acacia bivenosa*			
40.	17013	*Acacia colei var. colei*			
41.	12054	*Acacia drepanocarpa subsp. drepanocarpa*			
42.	3326	*Acacia eriopoda (Broome Pindan Wattle)*			
43.	3370	*Acacia hilliana*			
44.	3447	*Acacia monticola (Gawar, Lilwardi)*			
45.	29135	*Acacia sericophylla*			
46.		*Acacia sp.*			
47.	19456	*Acacia stellaticeps*			
48.	3560	*Acacia stipuligera*			
49.	19641	*Acacia tumida var. tumida*			
50.	12757	*Bauhinia cunninghamii*			
51.	14810	*Chamaecrista symonii*			
52.	15714	*Cullen stipulaceum*			
53.	3982	*Indigofera monophylla*			
54.	3987	*Indigofera trita*			
55.	3996	*Jacksonia aculeata*			
56.	4054	*Leptosema anomalum*			
57.	4279	*Tephrosia remotiflora*			
58.	15949	*Tephrosia sp. D Kimberley Flora (R.D. Royce 1848)*			

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Galaxauraceae					
59.	26835	*Galaxaura rugosa*			
Goodeniaceae					
60.	7490	*Goodenia armitiana*			
61.	13163	*Goodenia sepalosa var. sepalosa*			
62.	13173	*Scaevola parvifolia subsp. parvifolia*			
63.	7644	*Scaevola spinescens (Currant Bush, Maroon)*			
Halimedaceae					
64.	26894	*Halimeda macroloba*			
Halymeniaceae					
65.	44523	*Spongophloea tissotii*			
Loranthaceae					
66.	2386	*Amyema thalassia*			
67.	11809	*Lysiana spathulata subsp. spathulata*			
Malvaceae					
68.	4997	*Camptostemon schultzii (Kapok Mangrove)*			
69.	17339	*Corchorus incanus*			
70.	4960	*Lawrencia viridigrisea*			
71.	4979	*Sida hackettiana*			
72.	4992	*Thespesia populneoides (Laba)*			
73.	4878	*Triumfetta johnstonii*			
Moraceae					
74.	31578	*Ficus aculeata var. indecora (Ranji)*			
Myrtaceae					
75.	14650	*Corymbia flavescens*			
76.	17089	*Corymbia greeniana*			
77.	9178	*Melaleuca alsophila*			
Oleaceae					
78.	12059	*Jasminum didymum subsp. lineare (Desert Jasmine)*			
Plumbaginaceae					
79.	6486	*Aegialitis annulata (Club Mangrove)*			
Poaceae					
80.	20638	*Megathyrsus maximus*	Y		
81.	633	*Sporobolus mitchellii (Ratstail Couch)*			
82.	635	*Sporobolus virginicus (Marine Couch)*			
Polygalaceae					
83.	4577	*Polygala tepperi*			
Primulaceae					
84.	6478	*Aegiceras corniculatum (River Mangrove)*			
Proteaceae					
85.	16476	*Grevillea refracta subsp. refracta*			
86.	19074	*Grevillea wickhamii subsp. macrodonta*			
87.	2178	*Hakea macrocarpa (Dyaridany, Jaradinty)*			
88.	2263	*Persoonia falcata (Wild Pear, Gandala)*			
Rhizophoraceae					
89.	39680	*Ceriops australis*			
90.	5295	*Rhizophora stylosa (Spotted-leaved Red Mangrove)*			
Rhizophyllidaceae					
91.	27186	*Portieria hornemannii*			
Rhodomelaceae					
92.	26782	*Digenea simplex*			
Rubiaceae					
93.	28347	*Spermacoce occidentalis*			
94.	7364	*Timonius timon*			
Siphonocladaceae					
95.	26769	*Dictyosphaeria cavernosa*			
Solanaceae					
96.	7001	*Solanum dioicum (Gilu)*			
97.	7002	*Solanum diversiflorum*			
Udoteaceae					

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
98.	27348	*Udotea argentea*			

Zygophyllaceae

99.	4380	*Tribulus occidentalis (Perennial Caltrop)*			

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

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NatureMap
Mapping Western Australia's biodiversity

NatureMap Djarindjin cs flora Species Report

Created By Guest user on 04/05/2020

Kingdom	Plantae
Conservation Status	Conservation Taxon (T, X, IA, S, P1-P5)
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	122° 53' 44" E,16° 31' 13" S
Buffer	20km
Group By	Family

Family	Species	Records
Apocynaceae	1	2
Haemodoraceae	1	1
Lentibulariaceae	1	2
Myrtaceae	1	1
Poaceae	1	4
Stylidiaceae	1	2
TOTAL	**6**	**12**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Apocynaceae					
1.	17362	*Parsonsia kimberleyensis*		P1	
Haemodoraceae					
2.	45678	*Haemodorum capitatum*		P1	
Lentibulariaceae					
3.	48823	*Utricularia bidentata*		P3	
Myrtaceae					
4.	11425	*Lophostemon grandiflorus subsp. grandiflorus*		P3	
Poaceae					
5.	17888	*Triodia acutispicula*		P3	
Stylidiaceae					
6.	45717	*Stylidium pindanicum (Pindan Triggerplant)*		P3	

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

NatureMap
Mapping Western Australia's biodiversity

NatureMap Djarindjin cs fauna Species Report

Created By Guest user on 04/05/2020

Kingdom	Animalia
Conservation Status	Conservation Taxon (T, X, IA, S, P1-P5)
Current Names Only	Yes
Core Datasets Only	Yes
Method	'By Circle'
Centre	122° 53' 44" E,16° 31' 13" S
Buffer	20km
Group By	Species Group

Species Group	Species	Records
Bird	37	235
Mammal	3	11
Reptile	4	9
TOTAL	**44**	**255**

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
Bird					
1.	41323	*Actitis hypoleucos (Common Sandpiper)*		IA	
2.	25634	*Anous stolidus (Common Noddy)*		IA	
3.	24505	*Anous stolidus subsp. pileatus (Common Noddy)*		IA	
4.	25554	*Apus pacificus (Fork-tailed Swift, Pacific Swift)*		IA	
5.	25736	*Arenaria interpres (Ruddy Turnstone)*		IA	
6.	24779	*Calidris acuminata (Sharp-tailed Sandpiper)*		IA	
7.	24780	*Calidris alba (Sanderling)*		IA	
8.	25738	*Calidris canutus (Red Knot, knot)*		IA	
9.	24784	*Calidris ferruginea (Curlew Sandpiper)*		T	
10.	24788	*Calidris ruficollis (Red-necked Stint)*		IA	
11.	24790	*Calidris tenuirostris (Great Knot)*		T	
12.	25575	*Charadrius leschenaultii (Greater Sand Plover)*		T	
13.	25576	*Charadrius mongolus (Lesser Sand Plover)*		T	
14.	24632	*Erythrura gouldiae (Gouldian Finch)*		P4	
15.	25624	*Falco peregrinus (Peregrine Falcon)*		S	
16.	24478	*Fregata ariel (Lesser Frigatebird)*		IA	
17.	47954	*Gelochelidon nilotica (Gull-billed Tern)*		IA	
18.	48587	*Hydroprogne caspia (Caspian Tern)*		IA	
19.	30932	*Limosa lapponica (Bar-tailed Godwit)*		IA	
20.	25741	*Limosa limosa (Black-tailed Godwit)*		IA	
21.	24798	*Numenius madagascariensis (Eastern Curlew)*		T	
22.	24799	*Numenius minutus (Little Curlew, Little Whimbrel)*		IA	
23.	25742	*Numenius phaeopus (Whimbrel)*		IA	
24.	48591	*Pandion cristatus (Osprey, Eastern Osprey)*		IA	
25.	24382	*Pluvialis fulva (Pacific Golden Plover)*		IA	
26.	24383	*Pluvialis squatarola (Grey Plover)*		IA	
27.	25640	*Sterna dougallii (Roseate Tern)*		IA	
28.	25642	*Sterna hirundo (Common Tern)*		IA	
29.	24527	*Sterna hirundo subsp. longipennis (Common Tern)*		IA	
30.	48593	*Sternula albifrons (Little Tern)*		IA	
31.	25754	*Sula leucogaster (Brown Booby)*		IA	
32.	48597	*Thalasseus bergii (Crested Tern)*		IA	
33.	24803	*Tringa brevipes (Grey-tailed Tattler)*		P4	
34.	24806	*Tringa glareola (Wood Sandpiper)*		IA	
35.	24808	*Tringa nebularia (Common Greenshank, greenshank)*		IA	
36.	24810	*Tringa totanus (Common Redshank, redshank)*		IA	
37.	41351	*Xenus cinereus (Terek Sandpiper)*		IA	
Mammal					

	Name ID	Species Name	Naturalised	Conservation Code	[1]Endemic To Query Area
38.	24084	*Dugong dugon (Dugong)*		S	
39.	24168	*Macrotis lagotis (Bilby, Dalgyte, Ninu)*		T	
40.	24060	*Orcaella heinsohni (Australian Snubfin Dolphin)*		P4	

Reptile

41.	25336	*Chelonia mydas (Green Turtle)*		T	
42.	25343	*Lepidochelys olivacea (Olive Ridley Turtle, Pacific Ridley Turtle)*		T	
43.	25170	*Lerista separanda (Dampierland plain slider, skink)*		P2	
44.	25268	*Simoselaps minimus (Dampierland Burrowing Snake)*		P2	

Conservation Codes
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[1] For NatureMap's purposes, species flagged as endemic are those whose records are wholely contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

Australian Government
Department of the Environment and Energy

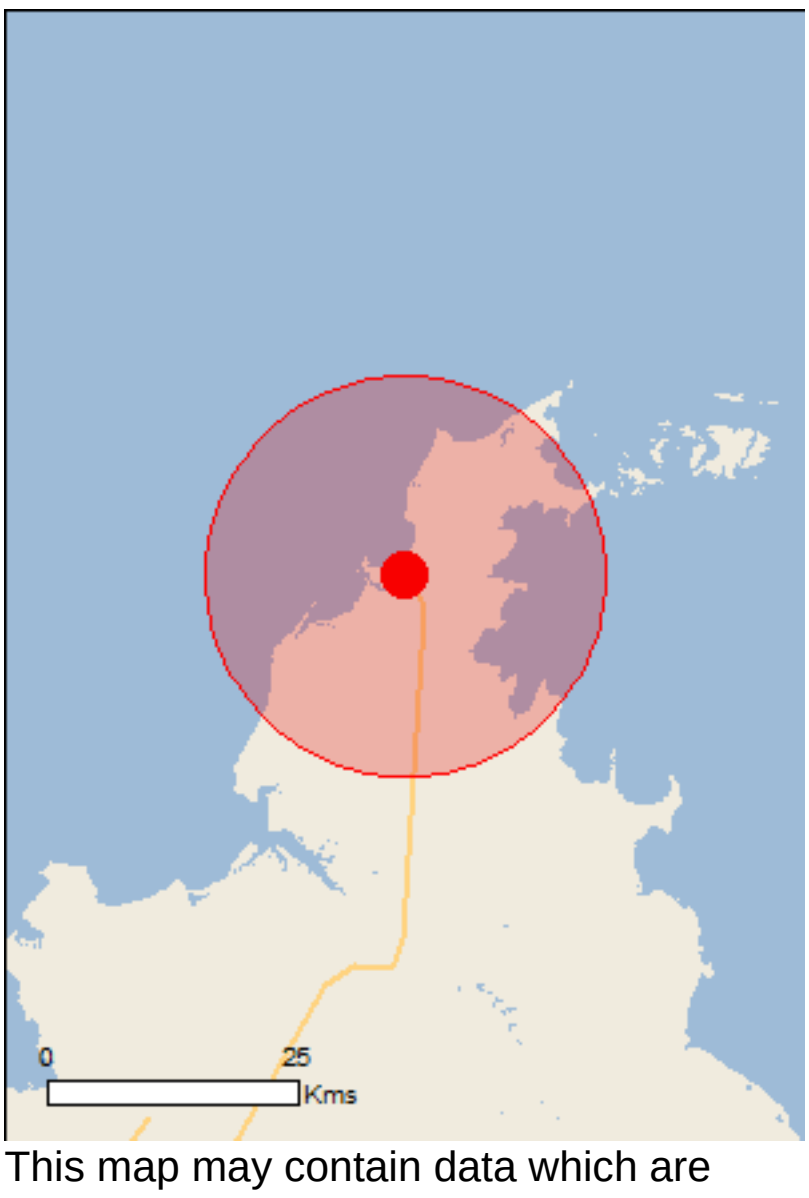
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 05/05/20 15:23:00



Coordinates
Buffer: 20.0Km

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	27
Listed Migratory Species:	46

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	81
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	9
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties [Resource Information]

Name	State	Status
Natural		
The West Kimberley	WA	Listed place

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name
EEZ and Territorial Sea

Marine Regions [Resource Information]

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name
North-west

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat known to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat may occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Sharks		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Breeding likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus		
Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas		
Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata ariel		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Sterna dougallii		
Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons		
Little Tern [82849]		Breeding known to occur within area
Sula sula		
Red-footed Booby [1023]		Breeding known to occur within area
Migratory Marine Species		
Anoxypristis cuspidata		
Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus porosus		
Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area

Name	Threatened	Type of Presence
Dugong dugon Dugong [28]		Foraging, feeding or related behaviour likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Foraging, feeding or related behaviour known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		

Name	Threatened	Type of Presence
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species	[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.	
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat known to occur within area
[Charadrius veredus](#) Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
[Chrysococcyx osculans](#) Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
[Glareola maldivarum](#) Oriental Pratincole [840]		Species or species habitat may occur within area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
[Hirundo daurica](#) Red-rumped Swallow [59480]		Species or species habitat may occur within area
[Hirundo rustica](#) Barn Swallow [662]		Species or species habitat may occur within area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat known to occur within area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat may occur within area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat likely to occur within area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur

Name	Threatened	Type of Presence
		within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Sterna albifrons Little Tern [813]		Breeding known to occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Foraging, feeding or related behaviour likely to occur within area
Reptiles		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Aipysurus tenuis Brown-lined Seasnake [1121]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnston's River Crocodile [1773]		Species or species habitat may occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area
Hydrelaps darwiniensis Black-ringed Seasnake [1100]		Species or species habitat may occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Hydrophis mcdowelli null [25926]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [1111]		Species or species habitat may occur within area
Lapemis hardwickii Spine-bellied Seasnake [1113]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Pelamis platurus		
Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Delphinus delphis		
Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus		
Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Orcaella brevirostris		
Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis		
Indo-Pacific Humpback Dolphin [50]		Foraging, feeding or related behaviour known to occur within area
Stenella attenuata		
Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus		
Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations)		
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str.		
Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Name	Label
Kimberley	Multiple Use Zone (IUCN VI)

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Bardi Jawi	WA

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat may occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat likely to occur within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat may occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Reptiles		
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-16.51623 122.89678

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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Appendix D Flora data

Flora species list

Raw site data

Quadrat data

Flora likelihood of occurrence assessment guidelines

Flora likelihood of occurrence assessment

Flora species list

Family	Taxon	Status
Aizoaceae	*Trianthema pilosa*	
Aizoaceae	*Trianthema pilosum*	
Amaranthaceae	*Gomphrena flaccida*	
Amaranthaceae	*Gomphrena tenella*	
Amaranthaceae	*Ptilotus calostachyus*	
Amaranthaceae	*Ptilotus fusiformis*	
Amaranthaceae	*Ptilotus polystachyus*	
Amaranthaceae	*Ptilotus astrolasius*	
Apocynaceae	*Calotropis gigantea*	
Apocynaceae	*Carissa lanceolata*	
Apocynaceae	*Wrightia saligna*	
Asteraceae	*Asteraceae* sp.	
Asteraceae	*Cyanthillium cinereum*	*
Boraginaceae	*Heliotropium foliatum*	
Boraginaceae	*Heliotropium leptaleum*	
Boraginaceae	*Trichodesma zeylanicum*	
Byblidaceae	*Byblis filifolia*	
Celastraceae	*Stackhousia intermedia*	
Cleomaceae	*Arivela tetrandra*	
Cleomaceae	*Arivela uncifera*	
Cleomaceae	*Cleome viscosa*	
Combretaceae	*Terminalia* sp.	
Commelinaceae	*Cartonema parviflorum*	
Commelinaceae	*Commelina ensifolia*	
Commelinaceae	*Commelina* sp.	
Commelinaceae	*Murdannia graminea*	
Convolvulaceae	*Bonamia linearis*	
Convolvulaceae	*Evolvulus alsinoides* var. *decumbens*	
Convolvulaceae	*Ipomea sp*	
Convolvulaceae	*Jacquemontia pannosa*	
Convolvulaceae	*Owenia reticulata*	
Convolvulaceae	*Polymeria ambigua*	
Convolvulaceae	*Polymeria calycina*	
Cyperaceae	*Abildgaardia schoenoides*	
Cyperaceae	*Bulbostylis barbata*	
Cyperaceae	*Cyperus brevifolius*	
Cyperaceae	*Cyperus castaneus*	
Cyperaceae	*Cyperus conicus*	
Cyperaceae	*Cyperus pulchellus*	
Cyperaceae	*Cyperus* sp.	
Cyperaceae	*Fimbristylis cardiocarpa*	
Cyperaceae	*Fimbristylis crosslandii*	
Cyperaceae	*Fimbristylis rara*	

Family	Taxon	Status
Euphorbiaceae	*Euphorbia coghlanii*	
Euphorbiaceae	*Microstachys chamaelea*	
Fabaceae	*Acacia adoxa* var. *subglabra*	
Fabaceae	*Acacia hilliana*	
Fabaceae	*Acacia colei* var. *colei*	
Fabaceae	*Acacia monticola*	
Fabaceae	*Acacia plectocarpa* subsp. *plectocarpa*	
Fabaceae	*Acacia tumida* var. *kulparn*	
Fabaceae	*Bauhinia cunninghamii*	
Fabaceae	*Clitoria ternatea*	*
Fabaceae	*Crotalaria brevis*	
Fabaceae	*Crotalaria medicaginea* var *neglecta*	
Fabaceae	*Glycine tomentella*	
Fabaceae	*Grona brownii*	
Fabaceae	*Indigofera hirsuta*	
Fabaceae	*Indigofera linnaei*	
Fabaceae	*Indigofera monophylla*	
Fabaceae	*Indigoferea linifolia*	
Fabaceae	*Senna notabilis*	
Fabaceae	*Senna oligoclada*	
Fabaceae	*Stylosanthes hamata*	*
Fabaceae	*Stylosanthes humilis*	*
Fabaceae	*Stylosanthes scabra*	*
Fabaceae	*Tephrosia andrewii*	Priority 3
Fabaceae	*Tephrosia* sp B Kimberly Flora (C.A. Gardner 7300)	
Fabaceae	*Vigna lanceolata* var. *filiformis*	
Fabaceae	*Zornia albifflora*	
Fabaceae	*Zornia sp.*	
Goodeniaceae	*Goodenia armitiana*	
Goodeniaceae	*Goodenia sepalosa var. sepalosa*	
Gyrostemonaceae	*Codonocarpus cotinifolius*	
Gyrostemonaceae	*Gyrostemon tepperi*	
Lamiaceae	*Premna acuminata*	
Linderniaceae	*Lindernia clausa*	
Loganiaceae	*Mitrasacme connata*	
Malvaceae	*Abutilon otocarpum*	
Malvaceae	*Brachychiton diversifolius* subsp *diversifolius*	
Malvaceae	*Corchorus incanus* subsp. *incanus*	
Malvaceae	*Corchorus sidoides* subsp. *sidoides*	
Malvaceae	*Gossypium rotundifolium*	
Malvaceae	*Hibiscus leptocladus*	
Malvaceae	*Sida* sp. Pindan (B.G. Thomson 3398)	
Malvaceae	*Triumfetta breviaculeata*	
Malvaceae	*Triumfetta carteri*	

Family	Taxon	Status
Malvaceae	*Waltheria indica*	
Meliaceae	*Azadirachta indica*	*
Menispermaceae	*Tinospora smilacina*	
Montiaceae	*Calandrinia strophiolata*	
Montiaceae	*Calandrinia tepperiana*	
Moraceae	*Ficus aculeata. indecora*	
Myrtaceae	*Melaleuca nervosa*	
Myrtaceae	*Melaleuca nervosa* subsp *crosslandiana*	
Myrtaceae	*Corymbia bella*	
Myrtaceae	*Corymbia flavescens*	
Myrtaceae	*Corymbia greeniana*	
Myrtaceae	*Corymbia hamersleyana*	
Myrtaceae	*Eucalyptus miniata*	
Nyctaginaceae	*Boerhavia coccinea*	
Onagraceae	*Ludwigia perennis*	
Orobanchaceae	*Buchnera linearis*	
Passifloraceae	*Passiflora foetida*	*
Phyllanthaceae	*Breynia cernua*	
Phyllanthaceae	*Phyllanthus exilis*	
Poaceae	*Aristida holathera*	
Poaceae	*Aristida hygrometrica*	
Poaceae	*Aristida laterfolia*	
Poaceae	*Cenchrus ciliaris*	*
Poaceae	*Cenchrus setiger*	*
Poaceae	*Chrysopogon pallidus*	
Poaceae	*Dactyloctenium radulans*	
Poaceae	*Digitaria ctenantha*	
Poaceae	*Eragrostis scabrida*	
Poaceae	*Eriachne melicacea*	
Poaceae	*Perotis rara*	
Poaceae	*Poaceae sp.*	
Poaceae	*Setaria dielsii*	
Poaceae	*Setaria surgens*	
Poaceae	*Sorghum plumosum*	
Poaceae	*Triodia ?acutispicula*	Priority 3
Poaceae	*Triodia epactia*	
Poaceae	*Triodia* sp	
Poaceae	*Yakirra australiensis* var. *australiensis*	
Poaceae	*Yakirra pauciflora*	
Proteaceae	*Grevillea heliosperma*	
Proteaceae	*Grevillea pyramidalis* subsp. *pyramidalis*	
Proteaceae	*Hakea arborescens*	
Proteaceae	*Hakea macrocarpa*	
Pteridaceae	*Platyzoma microphyllum*	
Rubiaceae	*Gardenia pyriformis* subsp. *keartlandii*	
Rubiaceae	*Paranotis mitrasacmoides*	

Family	Taxon	Status
Rubiaceae	*Scleromitrion scleranthoides*	
Rubiaceae	*Spermacoce occidentalis*	
Sapindaceae	*Dodonaea hispidula* var. *arida*	
Solanaceae	*Solanum cunninghamii*	
Violaceae	*Hybanthus aurantiacus*	

Flora species matrix

Taxon	Ard_HP_03	Beag_HP_04	Beag_HP_05	Bid_Hp_06	Bid_HP_07	Dja_HP_01	Dja_HP_02
Asteraceae sp.		1					
Abildgaardia schoenoides		1				1	1
Abutilon otocarpum					1		
Acacia adoxa var. *subglabra*				1	1		
Acacia arida				1	1		
Acacia colei var. *colei*					1		
Acacia monticola					1		
Acacia tumida var. *kulparn*	1		1			1	1
Aristida hygrometrica				1	1		
Arivela tetrandra	1		1			1	1
Arivela uncifera					1		
Bauhinia cunninghamii							1
Boerhavia coccinea (Tar Vine)					1		
Bonamia linearis	1		1	1	1		1
Brachychiton diversifolius subsp *diversifolius*	1		1			1	1
Breynia cernua	1						
Buchnera linearis		1					
Bulbostylis barbata				1			
Byblis filifolia		2					
Calandrinia strophiolata	1			1	1		1
Calandrinia tepperiana		1					
Calotropis gigantea			1				
Cartonema parviflorum		1					
Cenchrus ciliaris (Buffel Grass)				1	1		
Chrysopogon pallidus	1	1	1	1	1	1	1
Cleome viscosa (Tickweed)				1	1		
Commelina ensifolia							1
Commelina sp.				1	1		

Taxon	Ard_HP_03	Beag_HP_04	Beag_HP_05	Bid_Hp_06	Bid_HP_07	Dja_HP_01	Dja_HP_02
Corchorus incanus subsp. incanus				1	1		
Corchorus sidoides subsp. *sidoides*	1		1			1	
Corymbia bella		1					
Corymbia flavescens				1	1		
Corymbia greeniana	1	1	1				
Corymbia hamersleyana				1	1		
Crotalaria brevis						1	1
Crotalaria medicaginea var *neglecta*	1						
Cyperus brevifolius	1						
Cyperus castaneus		1					
Cyperus conicus		1					
Cyperus pulchellus		1					
Digitaria ctenantha		1					
Dodonaea hispidula var. *arida*						1	
Eragrostis scabrida		1					
Eriachne melicacea			1				
Eucalyptus miniata						1	1
Euphorbia coghlanii	1	1		1	1		
Evolvulus alsinoides var. *decumbens*						1	1
Ficus aculeata var. *indecora*					1		
Fimbristylis cardiocarpa		1					
Fimbristylis crosslandii	1						1
Fimbristylis rara		1					
Gardenia pyriformis subsp. *keartlandii*			1				
Glycine tomentella	1						
Gomphrena ?flaccida		1					
Gomphrena flaccida	1						
Gomphrena tenella		1	1				
Goodenia armitiana				1	1		
Goodenia sepalosa var. *sepalosa*			1	1	1	2	1

Taxon	Ard_HP_03	Beag_HP_04	Beag_HP_05	Bid_Hp_06	Bid_HP_07	Dja_HP_01	Dja_HP_02
Gossypium rotundifolium						1	1
Grevillea heliosperma	1						
Grevillea pyramidalis subsp. *pyramidalis*	1				1	1	
Grona brownii		1					
Gyrostemon tepperi							1
Heliotropium foliatum	1						
Heliotropium leptaleum	1		1	1	1	1	1
Hibiscus leptocladus				1	1		
Hybanthus aurantiacus	1		1	1	1	1	1
Indet. sp.	1						
Indigofera hirsuta	1	1					
Indigofera linnaei				1	1		
Indigofera monophylla					1		
Indigoferea linifolia				1	1		
Ipomea sp		1					
Jacquemontia sp. Broome (A.A. Mitchell 3028) (P1) or Jacquemontia pannosa	1						
Lindernia clausa		1					
Ludwigia perennis		1					
Melaleuca ?nervosa		1					
Melaleuca nervosa subsp *crosslandiana*		1					
Microstachys chamaelea						1	1
Murdannia graminea	1						1
Paranotis mitrasacmoides	1						
Phyllanthus exilis			1	1	1		1
Poaceae sp.		1				1	1
Polymeria ambigua						1	1
Polymeria calycina						1	1
Ptilotus calostachyus	1						
Ptilotus fusiformis		1	1				

Taxon	Ard_HP_03	Beag_HP_04	Beag_HP_05	Bid_Hp_06	Bid_HP_07	Dja_HP_01	Dja_HP_02
Ptilotus polystachyus					1		
Ptilotus astrolasius					1		
Scleromitrion scleranthoides	1	1					
Senna notabilis				1	1		
Senna oligoclada				1			
Setaria dielsii	1	1					
Setaria surgens					1		
Sida sp. Pindan (B.G. Thomson 3398)				1	1		
Solanum cunninghamii	1						1
Sorghum plumosum	1			1	1	1	1
Spermacoce occidentalis	1		1			1	1
Stackhousia intermedia		1					
Stylosanthes hamata				1	1		
Stylosanthes humilis		1					
Stylosanthes scabra		1					
Tephrosia andrewii (Priority 3)					1		
Tephrosia sp. B Kimberly Flora (C.A. Gardner 7300)				1	1	1	1
Terminalia sp.	1					1	
Trianthema pilosa				1	1		
Trianthema pilosum	1						
Trichodesma zeylanicum (Camel Bush)				1	1		
Triodia ?acutispicula	1						
Triodia epactia				1	1		
Triodia sp				1	1		
Triumfetta breviaculeata	1						
Vigna ?lanceolata var. *filiformis*	1						
Waltheria indica	1	1			1	1	1
Wrightia saligna	1						
Yakirra australiensis var. *australiensis*				1	1		

Taxon	Ard_HP_03	Beag_HP_04	Beag_HP_05	Bid_Hp_06	Bid_HP_07	Dja_HP_01	Dja_HP_02
Yakirra pauciflora			1				
Zornia albifflora	1						
Zornia sp.		1					

Flora raw site data

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Dja_HP_01	*Sorghum plumosum*	70-30%	1.75	Tussock grass (G)
Dja_HP_01	*Acacia tumida* var. *kulparn*	<10%	1.75	Shrub, cycad, grass-tree, tree-fern (M)
Dja_HP_01	*Spermacoce occidentalis*	<2% Numerous	0.25	Forb (G)
Dja_HP_01	*Goodenia sepalosa* var. *sepalosa*	<10%	0.25	Forb (G)
Dja_HP_01	*Hybanthus aurantiacus*	<2% Numerous	0.25	Forb (G)
Dja_HP_01	*Polymeria calycina*	<2% Numerous	0.25	Forb (G)
Dja_HP_01	*Evolvulus alsinoides* var. *decumbens*	<2% Numerous	0.25	Forb (G)
Dja_HP_01	*Heliotropium leptaleum*	<2% Numerous	0.25	Forb (G)
Dja_HP_01	*Waltheria indica*	<2% Numerous	0.25	Forb (G)
Dja_HP_01	*Goodenia sepalosa* var. *sepalosa*	<2% Numerous	0.25	Forb (G)
Dja_HP_01	*Microstachys chamaelea*	<2% Numerous	0.25	Forb (G)
Dja_HP_01	*Brachychiton diversifolius* subsp *diversifolius*	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Dja_HP_01	*Grevillea pyramidalis* subsp. *pyramidalis*	<2% Numerous	0.75	Shrub, cycad, grass-tree, tree-fern (M)
Dja_HP_01	*Tephrosia* sp. B Kimberly Flora (C.A. Gardner 7300)	<2% Few than 10	0.5	Forb (G)
Dja_HP_01	*Dodonaea hispidula* var. *arida*	<2% Numerous	0.75	Shrub, cycad, grass-tree, tree-fern (M)
Dja_HP_01	*Crotalaria brevis*	<2% Few than 10	0.25	Forb (G)
Dja_HP_01	*Corchorus sidoides* subsp. *sidoides*	<2% Numerous	0.25	Shrub, cycad, grass-tree, tree-fern (M)
Dja_HP_01	*Polymeria ambigua*	<2% Few than 10	0.25	Forb (G)
Dja_HP_01	*Poaceae* sp.	<2% Few than 10	0.5	Tussock grass (G)
Dja_HP_01	*Terminalia* sp.	<2% Few than 10	3	Tree, palm (U)
Dja_HP_01	*Eucalyptus miniata*	30-10%	12	Tree, palm (U)
Dja_HP_01	*Arivela tetrandra*	<2% Few than 10	0.1	Forb (G)
Dja_HP_01	*Abildgaardia schoenoides*	<10%	0.25	Sedge (G)
Dja_HP_01	*Gossypium rotundifolium*	<10%	0.25	Forb (G)
Dja_HP_01	*Chrysopogon pallidus*	<10%	1.25	Tussock grass (G)
Dja_HP_01_OPCOLL	*Acacia colei* var. *colei*			
Dja_HP_01_OPCOLL	*Trianthema pilosum*			

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Dja_HP_01_OPCOLL	*Commelina ensifolia*			
Dja_HP_01_OPCOLL	*Corymbia greeniana*			
Dja_HP_01_OPCOLL	*Stylosanthes scabra*			
Dja_HP_01_OPCOLL	*Aristida holanthera*			
Dja_HP_01_OPCOLL	*Perotis rara* (Comet Grass)			
Dja_HP_01_OPCOLL	*Dactyloctenium radulans* (Button Grass)			
Dja_HP_01_OPCOLL	*Yakirra pauciflora*			
Dja_HP_01_OPCOLL	*Paranotis mitrasacmoides*			
Dja_HP_01_OPCOLL	*Mitrasacme connata*			
Dja_HP_01_OPCOLL	*Glycine tomentella*			
Dja_HP_01_OPCOLL	*Codonocarpus cotinifolius* (Native Poplar)			
Dja_HP_01_OPCOLL	*Triumfetta carteri*			
Dja_HP_01_OPCOLL	*Sorghum plumosum*			
Dja_HP_01_OPCOLL	*Tinospora smilacina* (Snakevine)			
Dja_HP_01_OPCOLL	*Cenchrus setiger* (Birdwood Grass)			
Dja_HP_02	*Sorghum plumosum*	70-30%	1.75	Tussock grass (G)
Dja_HP_02	*Acacia tumida* var. *kulparn*	30-10%	1.75	Shrub, cycad, grass-tree, tree-fern (M)
Dja_HP_02	*Spermacoce occidentalis*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Goodenia sepalosa* var. *sepalosa*	<10%	0.25	Forb (G)
Dja_HP_02	*Hybanthus aurantiacus*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Polymeria calycina*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Evolvulus alsinoides* var. *decumbens*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Heliotropium leptaleum*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Abildgaardia schoenoides*	<10%	0.25	Sedge (G)
Dja_HP_02	*Gossypium rotundifolium*	<10%	0.25	Forb (G)
Dja_HP_02	*Solanum cunninghamii*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Eucalyptus miniata*	30-10%	12	Tree, palm (U)
Dja_HP_02	*Polymeria ambigua*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Bauhinia cunninghamii*	<2% Few than 10	1.5	Shrub, cycad, grass-tree, tree-fern (M)

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Dja_HP_02	*Tephrosia* sp. B Kimberly Flora (C.A. Gardner 7300)	<2% Few than 10	0.25	Forb (G)
Dja_HP_02	*Fimbristylis crosslandii*	<2% Few than 10	0.25	Forb (G)
Dja_HP_02	*Calandrinia strophiolata*	<2% Few than 10	0.25	Forb (G)
Dja_HP_02	*Waltheria indica*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Arivela tetrandra*	<2% Numerous	0.1	Forb (G)
Dja_HP_02	*Chrysopogon pallidus*	<10%	1.25	Tussock grass (G)
Dja_HP_02	*Phyllanthus exilis*	<2% Numerous	0.1	Forb (G)
Dja_HP_02	*Microstachys chamaelea*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Commelina ensifolia*	<2% Numerous	0.25	Forb (G)
Dja_HP_02	*Poaceae* sp.	<2% Few than 10	0.5	Tussock grass (G)
Dja_HP_02	*Brachychiton diversifolius* subsp *diversifolius*	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Dja_HP_02	*Crotalaria brevis*	<2% Few than 10	0.25	Forb (G)
Dja_HP_02	*Murdannia graminea*	<2% Few than 10	0.25	Forb (G)
Dja_HP_02	*Gyrostemon tepperi*	<2% Few than 10	0.25	Forb (G)
Dja_HP_02	*Bonamia linearis*	<2% Few than 10	0.25	Forb (G)
Ard_HP_03	*Chrysopogon pallidus*	70-30%	1.25	Tussock grass (G)
Ard_HP_03	*Corymbia greeniana*	30-10%	12	Tree, palm (U)
Ard_HP_03	*Grevillea pyramidalis* subsp. *pyramidalis*	<2% Numerous	1.75	Shrub, cycad, grass-tree, tree-fern (M)
Ard_HP_03	*Acacia tumida* var. *kulparn*	<10%	8	Shrub, cycad, grass-tree, tree-fern (M)
Ard_HP_03	*Calandrinia strophiolata*	<10%	0.25	Forb (G)
Ard_HP_03	*Setaria dielsii*	<2% Numerous	0.5	Tussock grass (G)
Ard_HP_03	*Waltheria indica*	<10%	0.25	Forb (G)
Ard_HP_03	*Brachychiton diversifolius* subsp *diversifolius*	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Ard_HP_03	*Fimbristylis crosslandii*	<2% Few than 10	0.25	Forb (G)
Ard_HP_03	*Trianthema pilosum*	<2% Few than 10	0.25	Forb (G)
Ard_HP_03	*Triodia ?acutispicula*	30-10%	0.5	Hummock grass (G)
Ard_HP_03	*Arivela tetrandra*	<2% Few than 10	0.1	Forb (G)
Ard_HP_03	*Corchorus sidoides* subsp. *sidoides*	<2% Numerous	0.25	Forb (G)

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Ard_HP_03	*Solanum cunninghamii*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Murdannia graminea*	<2% Few than 10	0.25	Forb (G)
Ard_HP_03	*Terminalia* sp.	<2% Few than 10	3	Tree, palm (U)
Ard_HP_03	*Bonamia linearis*	<2% Few than 10	0.25	Forb (G)
Ard_HP_03	*Glycine tomentella*	<2% Few than 10	0.25	Forb (G)
Ard_HP_03	*Hybanthus aurantiacus*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Spermacoce occidentalis*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Scleromitrion scleranthoides*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Paranotis mitrasacmoides*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Heliotropium leptaleum*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Cyperus brevifolius*	<2% Numerous	1.5	Shrub, cycad, grass-tree, tree-fern (M)
Ard_HP_03	*Jacquemontia* sp. Broome (A.A. Mitchell 3028) (P1) or *Jacquemontia pannosa*	<10%	0.25	Forb (G)
Ard_HP_03	*Grevillea heliosperma*	<2% Few than 10	1.25	Shrub, cycad, grass-tree, tree-fern (M)
Ard_HP_03	*Breynia cernua*	<2% Numerous	1.25	Shrub, cycad, grass-tree, tree-fern (M)
Ard_HP_03	*Heliotropium foliatum*	<2% Few than 10	0.1	Forb (G)
Ard_HP_03	*Vigna ?lanceolata* var. *filiformis*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Gomphrena flaccida*	<10%	0.25	Forb (G)
Ard_HP_03	*Ptilotus calostachyus*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Sorghum plumosum*	<2% Numerous	1.5	Tussock grass (G)
Ard_HP_03	*Triumfetta breviaculeata*	<2% Few than 10	0.5	Forb (G)
Ard_HP_03	*Zornia albifflora*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Indigofera hirsuta*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Crotalaria medicaginea* var *neglecta*	<2% Numerous	0.25	Forb (G)
Ard_HP_03	*Indet.* sp.	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Ard_HP_03	*Wrightia saligna*	<2% Numerous	0.25	Shrub, cycad, grass-tree, tree-fern (M)
Ard_HP_03	*Euphorbia coghlanii*	<2% Numerous	0.1	Forb (G)
Ard_HP_03_OPCOLL	*Acacia plectocarpa* subsp. *plectocarpa*			

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Ard_HP_03_OPCOLL	*Passiflora foetida* (Stinking Passion Flower)			
Ard_HP_03_OPCOLL	*Trichodesma zeylanicum* (Camel Bush)			
Ard_HP_03_OPCOLL	*Carissa lanceolata* (Conkerberry)			
Ard_HP_03_OPCOLL	*Tinospora smilacina* (Snakevine)			
Ard_HP_03_OPCOLL	**Cyanthillium cinereum*			
Ard_HP_03_OPCOLL	*Hakea arborescens* (Common Hakea)			
Ard_HP_03_OPCOLL	*Hakea macrocarpa* (Dyaridany)			
Ard_HP_03_OPCOLL	*Brachychiton diversifolius* subsp *diversifolius*			
Ard_HP_03_OPCOLL	*Aristida laterfolia*			
Ard_HP_03_OPCOLL	*Owenia reticulata*			
Ard_HP_03_OPCOLL	*Cyperus sp.*			
Ard_HP_03_OPCOLL	*Premna acuminata*			
Ard_HP_03_OPCOLL	**Azadirachta indica*			
Beag_HP_04	*Corymbia greeniana*	<2% Numerous	12	Tree, palm (U)
Beag_HP_04	*Scleromitrion scleranthoides*	70-30%	0.1	Forb (G)
Beag_HP_04	*Waltheria indica*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Chrysopogon pallidus*	30-10%	1	Tussock grass (G)
Beag_HP_04	*Setaria dielsii*	<2% Numerous	0.25	Tussock grass (G)
Beag_HP_04	*Euphorbia coghlanii*	<2% Few than 10	0.1	Forb (G)
Beag_HP_04	*Cyperus pulchellus*	<10%	0.1	Forb (G)
Beag_HP_04	*Buchnera linearis*	<2% Numerous	0.1	Forb (G)
Beag_HP_04	*Lindernia clausa*	<2% Numerous	0.1	Forb (G)
Beag_HP_04	*Cartonema parviflorum*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Stylosanthes humilis*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Fimbristylis rara*	<10%	0.25	Sedge (G)
Beag_HP_04	*Grona brownii*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Zornia* sp.	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Fimbristylis cardiocarpa*	<2% Numerous	0.25	Sedge (G)

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Beag_HP_04	*Stackhousia intermedia*	<2% Few than 10	0.25	Forb (G)
Beag_HP_04	*Digitaria ctenantha*	<2% Numerous	0.25	Other grass (G)
Beag_HP_04	*Asteraceae* sp.	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Gomphrena tenella*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Ptilotus fusiformis*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Melaleuca nervosa* subsp *crosslandiana*	<2% Numerous	4	Tree, palm (U)
Beag_HP_04	*Melaleuca ?nervosa*	<2% Numerous	9	Tree, palm (U)
Beag_HP_04	*Byblis filifolia*	<2% Numerous	0.1	Forb (G)
Beag_HP_04	*Ipomea* sp	<2% Numerous	0.5	Vine (G)
Beag_HP_04	*Calandrinia tepperiana*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Stylosanthes scabra*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Cyperus castaneus*	<2% Few than 10	0.1	Forb (G)
Beag_HP_04	*Abildgaardia schoenoides*	<2% Few than 10	0.25	Sedge (G)
Beag_HP_04	*Gomphrena ?flaccida*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Cyperus conicus*	<2% Numerous	0.25	Sedge (G)
Beag_HP_04	*Eragrostis scabrida*	<2% Numerous	0.5	Other grass (G)
Beag_HP_04	*Indigofera hirsuta*	<2% Numerous	0.25	Forb (G)
Beag_HP_04	*Poaceae* sp.	<2% Few than 10	0.25	Tussock grass (G)
Beag_HP_04	*Ludwigia perennis*	<2% Numerous	0.1	Forb (G)
Beag_HP_04	*Corymbia bella*	<2% Few than 10	8	Tree, palm (U)
Beag_HP_04_OPPCOLL	*Platyzoma microphyllum*			
Beag_HP_05	*Corymbia greeniana*	30-10%	12	Tree, palm (U)
Beag_HP_05	*Acacia tumida* var. *kulparn*	70-30%	6	Tree, palm (U)
Beag_HP_05	*Brachychiton diversifolius* subsp *diversifolius*	<2% Few than 10	1.25	Shrub, cycad, grass-tree, tree-fern (M)
Beag_HP_05	*Hybanthus aurantiacus*	70-30%	0.5	Forb (G)
Beag_HP_05	*Corchorus sidoides* subsp. *sidoides*	<10%	0.25	Shrub, cycad, grass-tree, tree-fern (M)
Beag_HP_05	*Spermacoce occidentalis*	<2% Numerous	0.25	Forb (G)
Beag_HP_05	*Chrysopogon pallidus*	<10%	1.25	Tussock grass (G)

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Beag_HP_05	*Heliotropium leptaleum*	<2% Numerous	0.25	Forb (G)
Beag_HP_05	*Calotropis gigantea*	<2% Few than 10	0.1	Forb (G)
Beag_HP_05	*Arivela tetrandra*	<2% Few than 10	0.1	Forb (G)
Beag_HP_05	*Phyllanthus exilis*	<2% Numerous	0.1	Forb (G)
Beag_HP_05	*Gomphrena tenella*	<2% Numerous	0.25	Forb (G)
Beag_HP_05	*Ptilotus fusiformis*	<2% Numerous	0.25	Forb (G)
Beag_HP_05	*Bonamia linearis*	<2% Numerous	0.25	Forb (G)
Beag_HP_05	*Goodenia sepalosa* var. *sepalosa*	<2% Few than 10	0.25	Forb (G)
Beag_HP_05	*Eriachne melicacea*	70-30%	0.25	Other grass (G)
Beag_HP_05	*Yakirra pauciflora*	<2% Few than 10	0.25	Other grass (G)
Beag_HP_05	*Gardenia pyriformis* subsp. *keartlandii*	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_06	*Hybanthus aurantiacus*	<2% Numerous	0.25	Forb (G)
Bid_HP_06	*Trichodesma zeylanicum* (Camel Bush)	<2% Numerous	0.25	Forb (G)
Bid_HP_06	*Senna notabilis*	<2% Numerous	0.25	Forb (G)
Bid_HP_06	*Chrysopogon pallidus*	<2% Numerous	1.25	Tussock grass (G)
Bid_HP_06	*Cleome viscosa* (Tickweed)	<2% Few than 10	0.25	Forb (G)
Bid_HP_06	**Cenchrus ciliaris* (Buffel Grass)	<2% Numerous	0.25	Tussock grass (G)
Bid_HP_06	*Trianthema pilosa*	<2% Numerous	0.1	Forb (G)
Bid_HP_06	*Hibiscus leptocladus*	<2% Few than 10	0.25	Forb (G)
Bid_HP_06	*Indigoferea linifolia*	<2% Numerous	0.25	Forb (G)
Bid_HP_06	*Euphorbia coghlanii*	<2% Numerous	0.1	Forb (G)
Bid_HP_06	*Bulbostylis barbata*	<2% Few than 10	0.25	Sedge (G)
Bid_HP_06	*Yakirra australiensis* var. *australiensis*	<2% Numerous	0.25	Other grass (G)
Bid_HP_06	*Goodenia sepalosa* var. *sepalosa*	<2% Numerous	0.25	Forb (G)
Bid_HP_06	*Calandrinia strophiolata*	<10%	0.25	Forb (G)
Bid_HP_06	*Phyllanthus exilis*	<2% Numerous	0.25	Forb (G)
Bid_HP_06	*Commelina* sp.	<2% Few than 10	0.25	Forb (G)
Bid_HP_06	*Triodia* sp	<10%	1.75	Hummock grass (G)
Bid_HP_06	*Triodia epactia*	70-30%	0.75	Hummock grass (G)

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Bid_HP_06	*Indigofera linnaei*	<10%	0.25	Forb (G)
Bid_HP_06	*Goodenia armitiana*	<2% Numerous	0.25	Forb (G)
Bid_HP_06	*Senna oligoclada*	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_06	*Sorghum plumosum*	30-10%	1.75	Tussock grass (G)
Bid_HP_06	*Stylosanthes hamata*	<10%	0.25	Forb (G)
Bid_HP_06	*Heliotropium leptaleum*	<2% Numerous	0.25	Forb (G)
Bid_HP_06	*Corchorus incanus* subsp. *incanus*	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_06	*Aristida hygrometrica*	<2% Numerous	0.5	Tussock grass (G)
Bid_HP_06	*Sida* sp. Pindan (B.G. Thomson 3398)	<2% Few than 10	0.25	Forb (G)
Bid_HP_06	*Corymbia flavescens*	<2% Few than 10	8	Tree, palm (U)
Bid_HP_06	*Corymbia hamersleyana*	<10%	6.5	Tree mallee (U)
Bid_HP_06	*Bonamia linearis*	<2% Numerous	0.1	Forb (G)
Bid_HP_06	*Tephrosia* sp B Kimberly Flora (C.A. Gardner 7300)	<2% Numerous	0.25	Forb (G)
Bid_HP_06	*Acacia adoxa* var. *subglabra*	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_06	*Acacia arida*	<2% Numerous	0.75	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Hybanthus aurantiacus*	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Trichodesma zeylanicum* (Camel Bush)	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Senna notabilis*	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Chrysopogon pallidus*	<10%	1.25	Tussock grass (G)
Bid_HP_07	*Cleome viscosa* (Tickweed	<2% Few than 10	0.25	Forb (G)
Bid_HP_07	**Cenchrus ciliaris* (Buffel Grass)	<2% Numerous	0.25	Tussock grass (G)
Bid_HP_07	*Trianthema pilosa*	<2% Numerous	0.1	Forb (G)
Bid_HP_07	*Hibiscus leptocladus*	<2% Few than 10	0.25	Forb (G)
Bid_HP_07	*Indigoferea linifolia*	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Euphorbia coghlanii*	<2% Numerous	0.1	Forb (G)
Bid_HP_07	*Yakirra australiensis* var. *australiensis*	<2% Numerous	0.25	Other grass (G)
Bid_HP_07	*Goodenia sepalosa* var. *sepalosa*	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Calandrinia strophiolata*	<10%	0.25	Forb (G)
Bid_HP_07	*Phyllanthus exilis*	<2% Numerous	0.25	Forb (G)

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Bid_HP_07	*Commelina* sp.	<2% Few than 10	0.25	Forb (G)
Bid_HP_07	*Triodia* sp	<10%	1.75	Hummock grass (G)
Bid_HP_07	*Triodia epactia*	70-30%	0.75	Hummock grass (G)
Bid_HP_07	*Indigofera linnaei*	<10%	0.25	Forb (G)
Bid_HP_07	*Goodenia armitiana*	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Sorghum plumosum*	30-10%	1.75	Tussock grass (G)
Bid_HP_07	*Stylosanthes hamata*	<10%	0.25	Forb (G)
Bid_HP_07	*Heliotropium leptaleum*	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Corchorus incanus* subsp. *incanus*	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Aristida hygrometrica*	<2% Numerous	0.5	Tussock grass (G)
Bid_HP_07	*Sida* sp. Pindan (B.G. Thomson 3398)	<2% Few than 10	0.25	Forb (G)
Bid_HP_07	*Corymbia flavescens*	<2% Few than 10	8	Tree, palm (U)
Bid_HP_07	*Corymbia hamersleyana*	<10%	6.5	Tree mallee (U)
Bid_HP_07	*Bonamia linearis*	<2% Numerous	0.1	Forb (G)
Bid_HP_07	*Tephrosia* sp B Kimberly Flora (C.A. Gardner 7300)	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Acacia adoxa* var. *subglabra*	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Acacia arida*	<2% Numerous	0.75	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Indigofera monophylla*	<2% Numerous	0.75	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Ptilotus astrolasius*	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Tephrosia andrewii*	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Ficus aculeata* var. *indecora*	<2% Few than 10	1.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Abutilon otocarpum*	<2% Few than 10	0.25	Forb (G)
Bid_HP_07	*Acacia monticola*	<2% Numerous	1.5	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Ptilotus polystachyus*	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Grevillea pyramidalis* subsp. *pyramidalis*	<2% Few than 10	1.75	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Waltheria indica*	<2% Numerous	0.25	Forb (G)
Bid_HP_07	*Acacia colei* var. *colei*	<2% Numerous	1.25	Shrub, cycad, grass-tree, tree-fern (M)
Bid_HP_07	*Setaria surgens*	<10%	0.5	Tussock grass (G)
Bid_HP_07	*Boerhavia coccinea* (Tar Vine)	<2% Few than 10	0.25	Forb (G)

Site number	Taxon	Cover (%)	Height (m)	Form/stratum
Bid_HP_07	*Arivela uncifera*	<2% Few than 10	0.25	Forb (G)

Quadrat data

Site ID:	Dja-HP-01	VT:	
Type:	Quadrat	Size: 50 x 50 m	
Date:	02/03/2021	Described by: Joel Collins	
Co-ordinates:	592127.48 E 13666893.63 N		
Landform and slope:	Sandplain		
Drainage:	Good		
Aspect:	Flat		
Soil colour & type:	Pale orange sand		
Vegetation condition:	Very good		
Fire age & intensity:	Recent (0-2yr)		
Disturbances:	Fire, insect attack on trees		
Leaf litter (%):	2-10%		
Bare ground (%)	<2%		

Site ID:	Dja-HP 02	VT:	
Type:	Quadrat	Size: 50 x 50m	
Date:	01/03/21	Described by: Joel Collins	
Co-ordinates:	592167.25 E	13666788.07 N	
Landform and slope:	Sand plain		
Drainage:	Good		
Aspect	Flat		
Soil colour & type:	Pale orange sand		
Vegetation condition:	Very good		
Fire age & intensity:	Recent (0-2yr)		
Disturbances:	Fire, insect attack on trees		
Leaf litter (%):	2-10%		
Bare ground (%)	<2%		

Site ID:	Ard-HP 03	VT:	
Type:	Quadrat	Size: 50 x 50 m	
Date:	03/03/21	Described by: Joel Collins	
Co-ordinates:	587808.75 E	13682066.59 N	
Landform and slope:	Sandplain		
Drainage:	Good		
Aspect	Flat		
Soil colour & type:	Orange brown sand		
Vegetation condition:	Very good		
Fire age & intensity:	Moderate (3 to 5 yr)		
Disturbances:	Near track, occasional weeds		
Leaf litter:	2-10%		
Bare ground	<2%		

Site ID:	Beag-HP 04	VT:	
Type:	Quadrat	Size: 10 x 10 m	
Date:	04/03/21	Described by: Joel Collins	
Co-ordinates:	619986.70 E	13638939.31 N	
Landform and slope:	Drainage Area/Floodplain		
Drainage:	Seasonal		
Aspect	Flat		
Soil colour & type:	Light brown, silty loam over clay		
Vegetation condition:	Excellent		
Fire age & intensity:	Old (6+ yr)		
Disturbances:	Donkey grazing, track		
Leaf litter (%):	2-10%		
Bare ground (%)	11-30%		

Site ID:	Beag-HP 05	VT:	
Type:	Quadrat	Size: 50 x 50 m	
Date:	05/03/21	Described by: Joel Collins	
Co-ordinates:	363834.51 E	13540763.78 N	
Landform and slope:	Sand plain		
Drainage:	Good		
Aspect	Flat		
Soil colour & type:	Red brown sand		
Vegetation condition:	Good		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	Near tracks, soil disturbance, near town		
Leaf litter (%):	<2%		
Bare ground (%):	11-30%		

Site ID:	Bid_HP 06		
Type:	Quadrat	Size: 50 x 50 m	
Date:	05/03/21	Described by: Joel Collins	
Co-ordinates:	363834.51 E	13540763.78 N	
Landform and slope:	Sand plain		
Drainage:	Good		
Aspect	Flat		
Soil colour & type:	Red brown sand		
Vegetation condition:	Very good		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	Near tracks, soil disturbance, near town		
Leaf litter:	<2%		
Bare ground	11-30%		

Site ID:	Bid_HP 07	VT: 2	
Type:	Quadrat	Size: 10 x 10 m	
Date:	05/03/021	Described by: Joel Collins	
Co-ordinates:	592127.48 E	13666893.63 N	
Landform and slope:	Sandplain		
Drainage:	Good		
Aspect	Flat		
Soil colour & type:	Red brown sand		
Vegetation condition:	Very good		
Fire age & intensity:	Recent (0 to 2 yr)		
Disturbances:	Near tracks, soil disturbance, near town		
Leaf litter:	<2%		
Bare ground	2-10%		

Flora likelihood of occurrence assessment guidelines

Likelihood of occurrence	Guideline
Recorded	Species recorded in current survey and/or previous recorded from desktop review
Likely	Species previously recorded within the study area and large areas of suitable habitat occur in the project area.
Possible	Species previously recorded within the study area and areas of suitable habitat occur/may occur in the project area.
Unlikely	Species previously recorded within the study area, but suitable habitat does not occur in the project area.
Highly unlikely	Species not previously recorded within the study area, suitable habitat does not occur in the project area and/or the project area is outside the natural distribution of the species.
Other considerations	Intensity of survey, availability of access, growth form type, recorded flowering times, cryptic nature of species

Source information - desktop searches

PMST – DEE Protected Matters Search Tool (PMST) to identify flora listed under the EPBC Act potentially occurring within the study area

TPFL and WAHERB – records of threatened flora from TPFL and WAHERB database searches within the study area

NM – DBCA *NatureMap* (accessed February 2020)

Flora likelihood of occurrence assessment of conservation significant flora identified in the desktop assessment as potentially occurring within the Ardyaloon project area

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–)	Likelihood of occurrence	Source
		EPBC Act	WC Act /DBCA			
Apocynaceae	*Parsonsia kimberleyensis*		P1	Climber, to 3 m high. Fl. yellow/green, May to Jun. Vine thickets.	**Unlikely** - species is found in growing in vine thickets. There is no suitable habitat within the site. The closest known record is located approximately 6 km south east of the project area.	NatureMap waHERB
Fabaceae	*Alysicarpus suffruticosus*		P2	Erect, compact shrub, ca 0.3 m high. Fl. pink, Apr. Sandy clay. Creek crossing.	**Unlikely** - species is found in growing in creek crossing. There is no suitable habitat within the site The closest known record is located	NatureMap waHERB TPFL

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–)	Likelihood of occurrence	Source
		EPBC Act	WC Act /DBCA			
					approximately 16 km east of the project area.	
Fabaceae	*Cullen candidum*		P1	Shrub, to 3 m high. Fl. white, Sep to Oct. Clayey sand.	**Unlikely.** Species is found in growing in clayey sand Suitable habitat is not present. The closest known record is located approximately 4 km east of the project area.	NatureMap TPFL
Fabaceae	*Tephrosia valleculata*		P3	Erect, few-stemmed shrub, to 2 m high. Fl. orange green, Apr to Sep. Sandy, often shallow, soil around sandstone. Rock outcrops	**Unlikely** - species is found in growing on rocky outcrops There is no suitable habitat within the site The closest known record is located approximately 7 km east of the project area.	NatureMap WAHERB
Haemodoraceae	*Haemodorum capitatum*		P1	Bulbous perennial to 0.5 m, flowers brick red. Pindan shrubland.	**Unlikely** The species has been recorded 12 km north east of the project area. Suitable habitat is present in the project area however, suitable search effort did not record the species.	NatureMap WAHERB
Lentibulariaceae	*Utricularia bidentata*		P3	Small herb 15 cm, flowers purple. Abundance: uncommon. Pindan woodland.	**Unlikely** The species has been recorded 13 km north east of the project area. Suitable habitat is present in the project area however, suitable search effort did not record the species.	NatureMap WAHERB

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–)	Likelihood of occurrence	Source
		EPBC Act	WC Act /DBCA			
Myrtaceae	*Lophostemon grandiflorus* subsp. *grandiflorus*		P3	Tree, 4-8 m high. Fl. cream-white, apparently Jan to Dec. Damp habitats (swamps, seepages).	**Unlikely** - species is found in growing in swamp areas. There is no suitable habitat within the project area. The closest known record is located approximately 12 km south west of the project area.	NatureMap WAHERB
Poaceae	*Triodia acutispicula*		P3	Tussock-forming resinonus perennial, grass-like or herb, 0.5-1.5 m high,.Fl. cream-brown, Jan to Apr. Sandy soils. River levees, pindan plains, rocky hillslopes & outcrops.	**Recorded** species tentatively recorded from current survey.	NatureMap WAHERB
Stylidiaceae	*Stylidium pindanicum* (Pindan Triggerplant)		P3	Herb to 25 cm; stems upper light green, below basal leaves red; leaves basally rosetted; flowers light to dark pink. Flat, sandy clay, seasonal swamps.	**Unlikely** - species is found in growing in swamp areas. There is no suitable habitat within the site. The closest known record is located approximately 4 km north west of the project area.	NatureMap waHERB
Zygophyllaceae	*Tribulopis* sp. Koolan Island (K.F. Kenneally 8278)		P1	Prostrate herb. Fl. yellow, Jun. Skeletal sand, sandstone. Gorges, shelly beaches, mudflats, mangroves.	**Unlikely** - species is found in growing in swamp areas. There is no suitable habitat within the site. The closest known record is located approximately 15 km north east of the project area.	NatureMap waHERB

Flora likelihood of occurrence assessment of conservation significant flora identified in the desktop assessment as potentially occurring within the Beagle Bay project area

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–, DEE 2018)	Likelihood of occurrence	Source
		EPBC Act	WC Act /DBCA			
Araceae	*Colocasia esculenta* var. *aquatilis*		P3	Thin wispy shrub to 1.4 m; stem reddish, hairy; leaves light green; pods small, dark. Aquatic lily to 1.5 m. Leaves to 30 cm across. Flowers yellow. Occur in swamps, shallow pools	**Unlikely** - species is found in growing in swamp areas. There is no suitable habitat within the project area. The closest known record is located approximately 1.5 km north east of the project area.	NatureMap WAHERB
Asteraceae	*Thespidium basiflorum*		P1	Herb to 15 cm branching from base; leaves light green, alternate, toothed; flowers thickly clustered mostly around base of stem, occurs in sandy soils, creek bed.	**Unlikely -** species is found in growing in creek bed. There is no suitable habitat within the project area. The closest known record is located approximately 16 km north of the project area.	NatureMap WAHERB
Byblidaceae	*Byblis guehoi*		P1	Flowers lilac-pink to violet, outer surface cream white. In a clump from a single stem, plenty of sticky glands, appearing olive-grey in colour. Occurs in areas of sand and loam silt.	**Unlikely** species found growing in sandy areas Suitable habitat present, however, suitable search effort did not record the species. The closest known record is located approximately 12 km north east of the survey area.	NatureMap WAHERB
Convolvulaceae	*Ipomoea tolmerana* subsp. *occidentalis*		P1	Perennial vine with mid mauve flowers, growing up to 1 m tall. This species is cryptic as its flowers fall before midday. Rocky sandstone with shallow organic loam soil	**Unlikely** - species is found in growing in loamy soil. There is no suitable habitat within the site. The closest known record is located approximately 15 km south of the survey area.	NatureMap WAHERB

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–, DEE 2018)	Likelihood of occurrence	Source
		EPBC Act	WC Act /DBCA			
Cyperaceae	*Cyperus haspan* subsp. *haspan*		P1	Rhizomatous, tufted perennial, grass-like or herb (sedge), 0.2-0.6 m high. Fl. green-brown, Feb to Sep. Sand, clay, alluvium. Swamps, along watercourses or in pools.	**Unlikely** – species is found in growing in swamp area. There is no suitable habitat within the site. The closest known record is located approximately 3 km south of the survey area.	NatureMap WAHERB
Fabaceae	*Aphyllodium glossocarpum*		P3	1.7m tall shrub with purple flowers. Shrub to 2 m, pea flower lilac-pink to purple. Occur in sandy areas	**Unlikely-** species is found in growing in sandy areas. Suitable habitat present, however, suitable search effort did not record the species. The closest known record is located approximately 3 km north of the project area.	NatureMap WAHERB TPFL
Fabaceae	*Glycine pindanica*		P3	Prostrate or scrambling perennial, herb or climber. Fl. pink/blue-purple, Feb to Mar or Jun. Pindan soils.	**Unlikely** the species is found in growing in pindan soils. The species has been recorded 17 km north east of the project area, suitable habitat is present within the project area, however, suitable search effort did not record the species.	NatureMap WAHERB
Haemodoraceae	*Haemodorum capitatum*		P1	Bulbous perennial, base of leaves tangerine, flowers maroon. Occur in sandy areas	**Unlikely -** species is found in growing in sandy areas The species has been recorded 11 km north west of the project area, suitable habitat is present within the project area, however, suitable search effort did not record the species.	NatureMap WAHERB

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–, DEE 2018)	Likelihood of occurrence	Source
		EPBC Act	WC Act /DBCA			
Lentibulariaceae	*Utricularia stellaris*		P1	Emergent aquatic, bladders green, flowers yellow.	**Highly Unlikely** This species has not been recorded within the study area and the project area and no suitable habitat is present.	NatureMap WAHERB
Loranthaceae	*Dendrophthoe odontocalyx*		P3	Hemi-parasite on Melaleuca viridiflora. Haustoria simple. Flowers pale orange with slight reddish tinge on anther filaments.	**Unlikely -** species is found host plants are *Melaleuca* or *Eucalyptus*. The species has been recorded 3 km north of the project area, suitable habitat is present within the project area, however, suitable search effort did not record the species.	NatureMap WAHERB
Menyanthaceae	*Nymphoides beaglensis*		P3	Small waterlily, leaves floating, heart shaped; flowers white and purple, emergent. Semi-aquatic herb, spreading 18 cm in shallow water. Flower white, pale mauve beneath petals. Flat, sandy clay, seasonal swamps.	**Unlikely** - species is found in growing in swamp area. There is no suitable habitat within the site. The closest known record is located approximately 6 km north east of the survey area.	NatureMap WAHERB TPFL
Stylidiaceae	*Stylidium costulatum*		P3	Annual upright herb with orange and yellow flowers growing up to 0.1 m tall. Sandy soil with high clay content	**Unlikely -** species is found in growing in sandy areas The species has been recorded 3 km north west of the project area, suitable habitat is present within the project area, however, suitable search effort did not record the species.	NatureMap WAHERB

Flora likelihood of occurrence assessment of conservation significant flora identified in the desktop assessment as potentially occurring within the Bidyadanga project area

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–, DEE 2018)	Likelihood of occurrence	Source
		EPBC Act	BC Act /DBCA			
Malvaceae	*Seringia katatona*		P3	Open woodland of Corymbia zygophylla over regrowth of sparse 1 m tall Acacia eriopoda shrubland over mid-dense shrubland and grasses of Seringia sp., Triodia sp.	Unlikely- species is found in growing in Acacia shrubland. Suitable habitat present, however, suitable search effort did not record the species. The closest known record is located approximately 15 km south east of the project area.	WAHERB
Fabaceae	*Tephrosia andrewii*	-	P3	Ascending, multistemmed shrub, to 0.8 m high. Flowers orange, April or October. Grows in sand. In pindan country.	Recorded within the survey area during current survey.	-

Flora likelihood of occurrence assessment of conservation significant flora identified in the desktop assessment as potentially occurring within the Djarindjijn project area

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–, DEE 2018)	Likelihood of occurrence	Source
		EPBC Act	BC Act /DBCA			
Apocynaceae	*Parsonsia kimberleyensis*			Climber; stem thick, greyish, many lenticels; leaves glossy dark green, paler beneath; flowers inconspicuous, green in dense heads.	**Unlikely-** species is found in growing in Shrubs and trees of vine thicket. Suitable habitat present. The closest known record	NatureMap WAHERB

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–, DEE 2018)	Likelihood of occurrence	Source
		EPBC Act	BC Act /DBCA			
					is located approximately 13 km north east of the project area.	
Haemodoraceae	*Haemodorum capitatum*			Bulbous perennial to 0.5 m, flowers brick red. Pindan shrubland.	**Unlikely -** The closest known record is located approximately 13 km north west of the project area. Suitable habitat is present in the project area, however, suitable search effort did not record the species.	NatureMap WAHERB
Lentibulariaceae	*Utricularia bidentata*			Herb, flowers lilac, Small herb 15 cm, flowers purple. Pindan woodland.	**Unlikely -** The closest known record is located approximately 15 km south west of the project area. Suitable habitat is present in the project area, however, suitable search effort did not record the species.	NatureMap WAHERB
Myrtaceae	*Lophostemon grandiflorus* subsp. *grandiflorus*		P3	Tree to 8 m; bark grey; leaves discolorous pale green to whitish below; flowers white-cream, turning orange with age. Coastal dunes, drainage basins.	**Unlikely** The closest known record is located approximately 5 km north east of the project area. Suitable habitat does not occur in the project area.	NatureMap WAHERB
Poaceae	*Triodia acutispicula*			Bunched spinifex grass. Leaves basal to 40 cm long x ca 7 mm, terete and sharp pointed. Main stems to 1.2 m. found on Plain/Red sand.	**Unlikely-** species is found in growing on Plain/Red sand areas Suitable habitat present, however, suitable search effort did not record the species. The closest known	NatureMap WAHERB

Family	Taxon	Status		Description (if available) (WA Herbarium 1998–, DEE 2018)	Likelihood of occurrence	Source
		EPBC Act	BC Act /DBCA			
					record is located approximately 5 km north east of the project area.	
Stylidiaceae	*Stylidium pindanicum* (Pindan Triggerplant)			Herb to 25 cm; stems upper light green, below basal leaves red; leaves basally rosetted; flowers light to dark pink. Flat, sandy clay, seasonal swamps.	**Unlikely.** The closest known record is located approximately 16 km north east of the project area. Suitable habitat does not occur in the project area.	NatureMap WAHERB

Appendix E Fauna data

Composite summary of data of bilby plots and transects

Likelihood of occurrence assessment

Fauna detected during field survey

Composite summary of data of bilby plots and transects

	Bilby					dog		fox		cat		cow		agile		echidna	coucal	bustard	Habitat								Descriptor of tracking conditions						Notes			
plot no.	trax	digs	burrow	scats	Presence/ absence	rd	plot	rd	plot	rd	plot	rd	plot	rd	plot	rd/plot	rd/plot	rd/plot	Broad habitat	Ground_dom. Sp.	g%cov	lit%c	Shrub_dom. Sp.	s%cov	Est. time	Fire notes	Small animals	plot trackability	plot ODS	wind strongest	rain 2 days	wind at sample	rain evidence	notes1	date	start time	obs name
Djarinjin Horizon Power	0	0	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	tall open w.l.	sorghum, herbs	37	50	acacia pindan	20	1yr	intense extensive burn last yr	1	3.7	10.7	0	0	0	0		3-Mar	8:40	rbc
Ardyaloon Horizon Power	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	tall open w.l.	tall grass, herbs, ground covers	60	20	acacia	10	1-3yr	potential for bilby	1			0	0	0	0		3-Mar	14:20	rbc
Beagle Bay Horizon Power	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	tall open w.l.	sena,grasses	70	30	acacia, sena	10	3yr	ranger says no bilby, too disturbed with power	1	3.4	10.4	0	0	0	0		4-Mar	14:00	rbc
Bidyadanga Horizon Power	0	0	0	0	0	1	1	0	0	0	1	1	1	1	1	0	0	0	tall open w.l.	triodia, native grasses	70	10	acacia	10	2-3yr	potential for bilby	1	3.4	10.4	0	0	0	0		5-Mar	11:00	rbc

0 = None recorded

1 = Evidence present

Small amials recorded = pigeon,quail,invertebrate,small bird, rodent, monitor

surface trackability: 1=very good … 4=very poor

plot_ODS: 4=very good … 13=very poor includes light, sun angle, continuity

Parameters of fauna likelihood of occurrence assessment

Assessment outcome	Description
Known	The species was recorded or has been recorded recently by reputable observers
Likely	Species are **likely** to occur in the project area where there is suitable habitat within the project area and there are recent records of occurrence of the species in close proximity to the project area. OR Species known distribution overlaps with the project area and there is suitable habitat within the project area.
Unlikely	Species assessed as **unlikely** include those species previously recorded within 5 km of the project area however: -There is limited (i.e. the type, quality and quantity of the habitat is generally poor or restricted) habitat in the project area. -The suitable habitat within the project area is isolated from other areas of suitable habitat and the species has no capacity to migrate into the project area. OR Those species that have a known distribution overlapping with the project area however: -There is limited habitat in the project area (i.e. the type, quality and quantity of the habitat is generally poor or restricted). -The suitable habitat within the project area is isolated from other areas of suitable habitat and the species has no capacity to migrate into the project area.
Highly unlikely	Species that are considered **highly unlikely** to occur in the project area include: -Those species that have no suitable habitat within the project area. -Those species that have become locally extinct, or are not known to have ever been present in the region of the project area.

Source information - desktop searches

PMST – DAWE PMST to identify fauna listed under the EPBC Act potentially occurring within the project area

DBCA – DBCA 2020. WA Government, DBCA Threatened and Priority fauna rankings

NM – DBCA NatureMap (accessed February 2020)

Fauna likelihood of occurrence assessment of conservation significant fauna identified in the desktop assessment as potentially occurring within the Ardyaloon study area

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Birds						
Actitis hypoleucos	Common Sandpiper	IA	MI	The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow, and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags (DEE 2019)	Unlikely, tidal coastline is located in proximity to the project area, however, no potentially suitable habitat present within the project area	NatureMap DBCA
Anous stolidus (all sub-species)	Common Noddy	IA	MI	The Common Noddy is found in tropical and sub-tropical seas off the west, north and east coasts of Australia, from the Abrolhos Islands in WA to the islands of the Great Barrier Reef in Qld, as well as Norfolk and Lord Howe Islands. Some are seen almost annually in NSW as far south as Sydney. It also ranges across tropical parts of the Pacific, Indian and Atlantic Oceans (DEE 2019).	Unlikely, no suitable habitat present	NatureMap DBCA
Apus pacificus	Fork-tailed Swift	IA	MI	The Fork-tailed Swift is common in coastal and sub coastal areas between Carnarvon and Augusta including near and offshore islands. There are scattered records along south coast from Denmark east to Cocklebiddy on the Great Australian Bight, and sparsely scattered records inland. They are found across a range of habitats, from inland open plains to wooded areas. They are most often observed over inland plains in Australia, but sometimes recorded over coastal cliffs and beaches as well as urban areas. They have been recorded well out to sea as well as from offshore	Unlikely, typically areal feeders during non-breeding season when present locally, and very rarely utilising terrestrial habitats	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				islands especially when on passage from Indonesia. This species is almost exclusively aerial (DEE 2019).		
Arenaria interpres	Ruddy Turnstone	IA	MI	In Australia, Ruddy Turnstones are widespread around the coast of the mainland and off-shore islands. They breed on the northern coasts of Europe, Asia and North America. They are found on coastlines around the world, when not breeding or on passage. They are found singly or in small groups along the coastline and only occasionally inland. They are mainly found on exposed rocks or reefs, often with shallow pools, and on beaches. In the north, they are found in a wider range of habitats, including mudflats (DEE 2019).	Unlikely, tidal coastline is located in proximity to the project area, however, no potentially suitable habitat present within the project area	NatureMap DBCA
Calidris acuminata	Sharp-tailed Sandpiper	IA	MI	In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry (DEE 2019).	Unlikely, tidal coastline is located in proximity to the project area, however no potentially suitable habitat present within the project area	NatureMap DBCA
Calidris alba	Sanderling	IA	MI	In Australia, the species is almost always found on the coast, mostly on open sandy beaches exposed to open sea-swell, and also on exposed sandbars and spits, and shingle banks, where they forage in the wave-wash zone and amongst rotting seaweed. Sanderlings also occur on beaches that may contain wave-washed rocky outcrops. Less often the species occurs on more sheltered sandy shorelines of estuaries, inlets and harbours (DEE 2019).	Unlikely, tidal coastline is located in proximity to the project area, however no potentially suitable habitat present within the project area	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Calidris canutus	Red Knot, Knot	EN	EN	In Australasia the Red Knot mainly inhabits intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (DEE 2018). They are found near mudflats and estuaries from Murchison to Bunbury but are then uncommon from Wilson Inlet to Esperance. In the Perth region they are mainly found in Alfred Cove and Peel Inlet (Nevill 2013).	Unlikely, tidal coastline is located in proximity to the project area, however no potentially suitable habitat present within the project area	NatureMap DBCA
Calidris ferruginea	Curlew Sandpiper	CR	CR	Curlew Sandpipers mainly occur in areas with soft mud conditions, including intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are found inland less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. In WA, they are widespread around coastal and subcoastal plains from Cape Arid to south-west Kimberley Division, but are more sparsely distributed between Carnarvon and Dampier Archipelago (DEE 2019). They are common on the Swan Coastal Plain, particularly near large drying lakes like Thompson and Forrestdale, and Peel Inlet. They are less common along the southern coast to Esperance (Nevill 2013).	Unlikely, no suitable habitat present	NatureMap EPBC
Calidris ruficollis	Red-necked Stint	IA	MI	The Red-necked Stint breeds in north-eastern Siberia and northern and western Alaska. It follows the East Asian-Australasian Flyway to spend the southern summer months in Australia. It is found widely in Australia, except in the arid	Unlikely, no suitable habitat present	NatureMap EPBC DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				inland. In Australia, Red-necked Stints are found on the coast, in sheltered inlets, bays, lagoons, estuaries, intertidal mudflats and protected sandy or coralline shores (Pizzey and Knight 2012).		
Calidris tenuirostris	Great Knot	CR	CR	The Great Knot has been recorded around the entirety of the Australian coast, with a few scattered records inland. It is now absent from some sites along the south coast where it used to be a regular visitor (Garnett and Crowley 2000). The greatest numbers are found in northern Australia; where the species is common on the coasts of the Pilbara and Kimberley, from the Dampier Archipelago to the Northern Territory border, and in the Northern Territory from Darwin and Melville Island, through Arnhem Land to the south-east Gulf of Carpentaria. In Australasia, the species typically prefers sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbors, estuaries and lagoons (DEE 2019).	Unlikely, tidal coastline is located in proximity to the project area, however no potentially suitable habitat present within the project area	NatureMap EPBC
Charadrius leschenaultii	Greater Sand Plover	VU	VU	In Australia, the Greater Sand Plover occurs in coastal areas in all states, though the greatest numbers occur in northern Australia, especially the north-west (Marchant & Higgins 1993). In northern Australia, the species is especially widespread between North West Cape and Roebuck Bay in WA; there are sparsely scattered records from the largely inaccessible area between Roebuck Bay and Darwin, but it often occurs in the Top End of the Northern Territory, including on Groote Eylandt (DEE 2019).	Unlikely, tidal coastline is located in proximity to the project area, however no potentially suitable habitat present within the project area	NatureMap EPBC
Charadrius mongolus	Lesser Sand Plover	EN	EN	Within Australia, the Lesser Sand-Plover is widespread in coastal regions, and has been recorded in all states. It mainly occurs in northern and eastern Australia, in south-eastern parts of the Gulf of Carpentaria, western Cape York Peninsula and islands in Torres Strait, and along the entire east coast, though it occasionally also occurs inland. It is	Unlikely, tidal coastline is located in proximity to the project area, however no	NatureMap EPBC

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				most numerous in Queensland and NSW. The species has also been recorded on Lord Howe Island, Norfolk Island and Christmas Island, Indian Ocean. In non-breeding grounds in Australia, this species usually occurs in coastal littoral and estuarine environments. It inhabits large intertidal sandflats or mudflats in sheltered bays, harbors and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. It also sometime occurs in short saltmarsh or among mangroves. The species also inhabits saltworks and near-coastal saltpans, brackish swamps and sandy or silt islands in river beds (Marchant & Higgins 1993). In north-western Australia, the species appears to use the Port Hedland saltworks in preference to nearby beaches.	potentially suitable habitat present within the project area	
Erythrotriorchis radiatus	Red Goshawk	VU	VU	The Red Goshawk occurs in coastal and sub-coastal areas in wooded and forested lands of tropical and warm-temperate Australia (Marchant & Higgins 1993). Riverine forests are also used frequently. Such habitats typically support high bird numbers and biodiversity, especially medium to large species which the goshawk requires for prey. The Red Goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within one km of permanent water (DEE 2019).	Unlikely – uncommon in the Dampierland. Local occurrence would be as vagrant	EPBC DBCA
Erythrura gouldiae	Gouldian Finch	P4	EN	The Gouldian Finch inhabits open woodlands that are dominated by Eucalyptus trees and support a ground cover of Sorghum and other grasses (Boekel 1980). The critical components of suitable core habitat for the Gouldian Finch appear to be the presence of favoured annual and perennial grasses (especially Sorghum), a nearby source of surface water and, in the breeding season, unburnt hollow-bearing Eucalyptus trees (especially E. tintinnans, E. brevifolia and E. leucophloia) (Higgins et al. 2006).	Likely, known to occur locally, may forage on seed of a range of locally occurring grasses when seasonally suitable within the project area.	NatureMap EPBC DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Falco peregrinus	Peregrine Falcon	OS		The Peregrine Falcon is uncommon but wide ranging across Australia. Found everywhere from woodlands to open grasslands and coastal cliffs – though less frequently in desert regions – it feeds almost entirely on other birds. It also eats rabbits and other moderate sized mammals, bats and reptiles. The Peregrine Falcon is very territorial during breeding season, the male courting the female with an impressive display of aerobatics (DEE 2019, Morcombe 2004).	Likely, the species is known to persist in the region, however use would be foraging only with no breeding habitat present, such as tall structures or steep topography.	NatureMap EPBC
Fregata ariel	Lesser Frigatebird	IA	MI	The Lesser Frigatebird is said to be the most common and widespread frigatebird in Australian seas (DEE 2018). It is common in tropical seas, breeding on remote islands, including Christmas Island in the Indian Ocean in recent years. These birds are most likely to be seen from the mainland prior to the onset of a tropical cyclone, and once this abates they disappear again	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap EPBC
Gelochelidon nilotica	Gull-billed Tern	IA	MI	The Gull-billed Tern is nomadic or migratory species in Australia. Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands, where resources are favourable. They are only rarely found over the ocean. The Gull-billed Tern. Although essentially an inland species, outside breeding season it shows a distinct preference for saltmarshes and lagoons near the coast. Movements are not fully understood but it is common and widespread in Australia (Morcombe 2004).	Unlikely, no suitable habitat (wetland) present	NatureMap EPBC
Hydroprogne caspia	Caspian Tern	IA	MI	The Caspian Tern is mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs,	Unlikely, tidal coastline is located in proximity to the project area, however no	NatureMap EPBC

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs (DEE 2019).	potentially suitable habitat present within the project area	
Limosa lapponica (all subspecies)	Bar-tailed Godwit	VU, IA	VU, MI	Bar-tailed Godwits arrive in Australia each year in August from breeding grounds in the northern hemisphere. Birds are more numerous in northern Australia Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders (Birdlife Australia 2019).	Unlikely, no suitable habitat present	NatureMap EPBC DBCA
Limosa limosa	Black-tailed Godwit	IA	MI	In Australia the Black-tailed Godwit has a primarily coastal habitat environment. The species is commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand or shell-grit; occasionally recorded on rocky coasts or coral islets. The use of habitat often depends on the stage of the tide. It is also found in shallow and sparsely vegetated, near-coastal, wetlands; such as saltmarsh, saltflats, river pools, swamps, lagoons and floodplains. There are a few inland records, around shallow, freshwater and saline lakes, swamps, dams and bore-overflows. They also use lagoons in sewage farms and saltworks (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap DBCA
Numenius madagascariensis	Eastern Curlew	CR	CR	The Eastern Curlew is most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. The birds are often recorded among saltmarsh and on mudflats fringed by mangroves, sometimes within the mangroves, and in coastal saltworks and sewage farms. In the south west,	Unlikely, no suitable habitat present	NatureMap EPBC DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				Eastern Curlews are recorded from Eyre, and there are scattered records from Stokes Inlet to Peel Inlet (Marchant & Higgins 1993). They are uncommon further south of Geraldton, but can be spotted in Alfred Cove, Peel Inlet and the Albany region (Nevill 2013).		
Numenius minutus	Little Curlew, Little Whimbrel	IA	MI	Little Curlews generally spend the non-breeding season in northern Australia from Port Hedland in WA to the Queensland coast (Minton 2002 pers. comm.). There are records of the species from inland Australia, and widespread but scattered records on the east coast. The Little Curlew is most often found feeding in short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow freshwater pools or areas seasonally inundated. Open woodlands with a grassy or burnt understory, dry saltmarshes, coastal swamps, mudflats or sandflats of estuaries or beaches on sheltered coasts, mown lawns, gardens, recreational areas, ovals, racecourses and verges of roads and airstrips are also used (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap EPBC
Numenius phaeopus	Whimbrel	IA	MI	The Whimbrel is often found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, un-vegetated mudflats. It is occasionally found on sandy or rocky beaches, on coral or rocky islets, or on intertidal reefs and platforms. It has been infrequently recorded using saline or brackish lakes near coastal areas. It also used saltflats with saltmarsh, or saline grasslands with standing water left after high spring-tides, and in similar habitats in sewage farms and saltfields (Higgins & Davies 1996). There are a small number of inland records from saline lakes and canegrass swamps. It has also been recorded in coastal dunes and a football field.	Unlikely, no suitable habitat present	NatureMap EPBC

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Onychoprion anaethetus	Bridled tern			In Australia, Bridled Terns are widespread, breeding on offshore islands in western, northern and north-eastern Australia, extending from Cape Leeuwin in the south-west, around northern Australia to north-eastern and mid-eastern Queensland, extending through the Great Barrier Reef and Coral Sea as far south as Lady Elliott Island (approximately 24° S). Exceptionally, a pair bred in South Australia, within a large colony of Crested Terns (*Thalasseus bergii*), on Baudin Rocks, in 1968 and 1969. Further, the species breeds at one mainland site in far-southern Western Australia (at Knobby Head near Cape Hamelin) (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments and offshore islands.	DBCA
Pandion cristatus	Osprey, Eastern Osprey	IA	MI	The breeding range of the Eastern Osprey extends around the northern coast of Australia (including many offshore islands) from Albany in WA to Lake Macquarie in NSW; with a second isolated breeding population on the coast of South Australia, extending from Head of Bight east to Cape Spencer and Kangaroo Island. Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands (DEE 2019).	Unlikely, no suitable nesting habitat present, although opportunistic visitation may occur due to near-coastal location of survey area.	NatureMap DBCA
Phaethon rubricauda	Red-tailed Tropicbird		VU	In Australia, it nests on Queensland's coral islands (including Raine Island and Lady Elliot Island), and Ashmore Reef and Rottnest Island off Western Australia, as well as Sugarloaf Rock at Cape Naturaliste and Busselton on the Western Australian coastline itself, and the offshore territories of the Cocos (Keeling) Islands, Norfolk and Lord Howe islands. In New Zealand territory it breeds on the Kermadec Islands. It frequents areas of ocean with water temperatures from 24 to 30 °C (75 to 86 °F) and salinity under 35% in the southern hemisphere and 33.5% in the northern hemisphere. In the Pacific Ocean, the southern boundary of its range runs along the 22 °C (72 °F) summer surface isotherm The warm waters of the Leeuwin Current	Unlikely, Pelagic species. The survey area lacks potentially suitable breeding habitat.	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				facilitate the species nesting at Cape Leeuwin in southwestern Australia, yet is only a rare visitor to New South Wales at corresponding latitudes on the Australian east coast (Higgens et al 1990).		
Pluvialis fulva	Pacific Golden Plover	IA	MI	The Pacific Golden Plover breeds on the Arctic tundra in western Alaska. It winters in South America and islands of the Pacific Ocean to India, Indonesia and Australia. In Australia it is widespread along the coastline. Pacific Golden Plovers usually occur on beaches, mudflats and sandflats (sometimes in vegetation such as mangroves, low saltmarsh such as Sarcocornia, or beds of seagrass) in sheltered areas including harbours, estuaries and lagoons, and also in evaporation ponds in saltworks. The species is also sometimes recorded on islands, sand and coral cays and exposed reefs and rocks (DEE 2019)	Unlikely, no suitable habitat present	NatureMap DBCA
Pluvialis squatarola	Grey Plover	IA	MI	The Grey Plover breeds around the Arctic regions and migrates to the southern hemisphere, being a regular summer migrant to Australia, mostly to the west and south coasts. It is generally sparse but not uncommon in some areas. It is occasionally found inland. It is almost entirely coastal, being found mainly on marine shores, inlets, estuaries and lagoons with large tidal mudflats or sandflats for feeding, sandy beaches for roosting, and also on rocky coasts (Birdlife Australia 2019).	Unlikely, no suitable habitat present	NatureMap DBCA
Papasula abbotti	Abbott's Booby		EN	Currently, Abbott's Booby is only known to breed on Christmas Island and to forage in the waters surrounding the island Within Christmas Island, most nests are found in the tall plateau forest on the central and western areas of the island, and in the upper terrace forest of the northern coast. The species was once thought to be restricted to areas above 150 m, mostly on the sides of north-west facing slopes but a survey in 1991 located them in some new areas Some of these areas had been known but were not	Highly Unlikely, no habitat present and the species utilises marine environments	EPBC

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				recorded in a 1981 survey This revised distribution would be due partly to movement of the birds but the survey also discovered previously unknown nesting areas (DEE 2019).		
Pezoporus occidentalis	Night Parrot		CR	The Night Parrot is a highly elusive nocturnal ground dwelling parrot found in the arid and semi-arid zones of Australia; it is one of only three ground-dwelling parrots in Australia.The Night Parrot was thought to be extinct but in 2013 it was rediscovered in Queensland (Pullen Pullen Reserve). Subsequently, the Night Parrot Recovery Team confirms that there is one population recently recorded in the Diamantina National Park/Pullen Pullen Reserve area in western Queensland, and other recent records in the Wiluna district of central WA, and the Lake Gregory area of northern WA .Purported records at Kalamurina in SA and Goneaway NP in Queensland have not been confirmed (DEE 2019).	Highly Unlikely, the species is not known from this region and limited available habitat	EPBC
Rostratula australis	Australian Painted Snipe	EN	EN	The Australian Painted Snipe is restricted to Australia with historical records from around the Perth region in WA. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. The nest consists of a scrape in the ground, lined with grasses and leaves. Breeding is often in response to local conditions; generally occurs from September to December. Incubation and care of young is all undertaken by the male only. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter (DEE 2019).	Unlikely, no suitable habitat present	EPBC
Sterna dougallii (all sub-species)	Roseate Tern	IA	MI	The Roseate Tern occurs in coastal and marine areas in subtropical and tropical seas. The species inhabits rocky and sandy beaches, coral reefs, sand cays and offshore islands. Birds rarely occur in inshore waters or near the mainland, usually venturing into these areas only	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				accidentally, when nesting islands are nearby (Higgins & Davies 1996). The usually roosts or loafs in the intertidal zone on islands, including on the upper sections of beaches, above the high-water mark (but still in the wash-zone) on banks, spits and bars, usually of coral or sand. Birds occasionally roost on exposed rubble banks or on rocky features, such as cliffs, headlands, plateaux, stacks and ledges, among rocks or in crags (DEE 2019).		
Sterna hirundo (all sub-species)	Common Tern	IA	MI	In northern Australia there are scattered records in the Kimberley Division of WA, but the species has recently been found to be one of the most abundant species recorded in ground surveys of waterbirds of the Top End of the Northern Territory. In Australia, they are recorded in all marine zones, but are commonly observed in near-coastal waters, both on ocean beaches, platforms and headlands and in sheltered waters, such as bays, harbours and estuaries with muddy, sandy or rocky shores (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap
Sternula albifrons	Little Tern	IA	MI	In Australia, Little Terns inhabit sheltered coastal environments, including lagoons, estuaries, river mouths and deltas, lakes, bays, harbours and inlets, especially those with exposed sandbanks or sand-spits, and also on exposed ocean beaches (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA
Sula leucogaster (all sub-species)	Brown Booby	IA	MI	In Australia, the Brown Booby is found from Bedout Island in WA, around the coast of the Northern Territory to the Bunker Group of islands in Queensland with occasional reports further south in New South Wales and Victoria. The species is reported further south to Tweed Heads, NSW, and to near Onslow, WA and may be becoming more common in these areas. The Brown Booby uses both marine and terrestrial habitat. The species occurs in, but is not restricted to, tropical waters of all major oceans, often staying close to breeding islands (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Thalasseus bergii	Crested Tern	IA	MI	Crested Terns occur singularly or in flocks in coastal areas, estuaries, inlets, islands and occasionally on large inland lakes or rivers. They are often seen perching with gulls on beaches, sand spits or jetties. Crested Terns are widespread from the south coast of Africa north to Asia, south to Australia and east to Polynesia. They also occur on many islands in the Indian and Pacific Oceans (DEE 2018).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap
Tringa brevipes	Grey-tailed Tattler	P4, IA	MI	Crested Terns occur singularly or in flocks in coastal areas, estuaries, inlets, islands and occasionally on large inland lakes or rivers. They are often seen perching with gulls on beaches, sand spits or jetties. Crested Terns are widespread from the south coast of Africa north to Asia, south to Australia and east to Polynesia. They also occur on many islands in the Indian and Pacific Oceans (DEE 2018).	Unlikely, no suitable habitat present	
Tringa glareola	Wood Sandpiper)	IA	MI	Within Australia, the Grey-tailed Tattler has a primarily northern coastal distribution and is found in most coastal regions (Higgins & Davies 1996). The Grey-tailed Tattler is often found on sheltered coasts with reefs and rock platforms or with intertidal mudflats. It can also be found at intertidal rocky, coral or stony reefs as well as platforms and islets that are exposed at low tide (DEE 2018).	Unlikely, no suitable habitat present	NatureMap DBCA
Tringa nebularia	Common Greenshank, greenshank	IA	MI	The Wood Sandpiper uses well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes. Wood Sandpipers are more numerous in the north than the south of Australia and are also found in New Guinea, Africa, the Indian subcontinent and South-east Asia. They breed widely across the north of Europe and Asia, mostly in Scandinavia, Baltic countries and Russia. They are the most abundant migratory wader in non-coastal areas of Asia (DEE 2019).	Unlikely, tidal coastline is located in proximity to the project area, however no potentially suitable habitat present within the project area	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Tringa totanus	Common Redshank, redshank	IA	MI	In Australia, the Common Redshank has been recorded at scattered locations. In WA the species is vargrant to the south-west with records at Peel Inlet, Coodanup, the Gascoyne region, Coral Bay and Carnarvon (Higgins & Davis 1996). It is regular and widespread in the north-west, from the Dampier Saltfields to Roebuck Bay and Broome. The Common Redshank is found at sheltered coastal wetlands such as bays, river estuaries, lagoons, inlets and saltmarsh (with bare open flats and banks of mud or sand). They are also found around saltlakes, freshwater lagoons, artificial wetlands and saltworks and sewage farms (Higgins & Davies 1996).	Unlikely, tidal coastline is located in proximity to the project area, however no potentially suitable habitat present within the project area	NatureMap DBCA
Tyto novaehollandiae kimberli	Masked Owl	P1	VU	The range of the Masked Owl is a broad coastal band around most of mainland Australia and throughout Tasmania, and for the most part is less than 300 km from the coast. Population numbers are low on the mainland and several states give this species special conservation status. The Masked Owl inhabits heavy forests, and will hunt over open woodlands, timbered waterways and open country on the fringe of these areas. The main requirements are tall trees with suitable hollows for nesting and roosting and adjacent areas for foraging. Masked Owls are territorial, and pairs remain in or near the territory all year round (Birdlife Australia 2019)	Highly Unlikely, This species is not known from this region. All known records are from central and Northern Kimberley.	EPBC
Xenus cinereus	Terek Sandpiper	IA	MI	In Australia, the Terek Sandpiper has a primarily coastal distribution, with occasional records inland. It is more widespread and common in northern and eastern Australia than southern Australia (DEE 2018). The Terek Sandpiper mostly forages in the open, on soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons. The species has also been recorded on islets, mudbanks, sandbanks and spits, and near mangroves and occasionally in samphire (Halosarcia spp.). Birds are seldom near	Unlikely, no suitable habitat present	NatureMap

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				the edge of water, however, birds may wade into the water (Marchant & Higgins 1993).		
Mammals						
Macroderma gigas	Ghost bat	VU	VU	The Ghost Bat occurs in a wide range of habitats, and requires an undisturbed cave, deep fissure or disused mine shaft in which to roost. It is patchily distributed across Australia, and is sensitive to disturbance (Van Dyck and Strahan 2008).	Highly Unlikely, this species is not known from the area. No habitat present (lack of bisected rocky cave-forming geomorphology.	EPBC
Macrotis lagotis	Greater Bilby, Dalgyte, Ninu	VU	VU	In WA the species is restricted to the north, including the Pilbara, Sandy and Gibson Deserts. The Greater Bilby usually spends the daytime in burrows, often built against termite mounds, spinifex hummock or shrubs (Van Dyck and Strahan 2008). Extant population occur in a variety of habitats, usually on landforms with level to low slope topography and light to medium soils. It occupies three major vegetation types; open tussock grassland on uplands and hills, mulga woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas. Laterite and rock feature substrates are an important part of the species' habitat. These habitat support shrub species, such as Acacia kempeana, A. hilliana and A. rhodophloia, which have root-dwelling larvae that provide a constant food source. The current occurrence of this species is strongly associated with higher rainfall and temperatures, which promote areas of higher plant and food production (DEE 2019).	Likely, the species is known to occur locally based on previous records. No evidence of activity was recorded within the project area, however based on close proximity of records, habitat characteristics, and transieny nomadic behavoiur, this species is likely forage or move through the project area, and the project area habitat is potential burrowing habitat.	NatureMap

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
					Being close to the community may impact on the species numbers and distribution.	
Saccolaimus saccolaimus nudicluniatus	Bare-rumped Sheath-tailed Bat,	P3	VU	The Bare-rumped Sheathtail Bat occurs mostly in lowland areas, typically in a range of woodland, forest and open environments (DotE 2016). The Bare-rumped Sheathtail Bat has been suggested to forage over habitat edges such as the edge of rainforest and in forest clearings (Churchill 1998). There is no information is available on foraging habitat shifts between the dry and wet seasons. The small number of confirmed roosts located in Australia have all been in tree hollows. Overseas other subspecies (perhaps distinct species to the form(s) occurring in Australia) commonly roost in caves, overhangs and man-made structures. However, in Australia no individuals have been found roosting in caves. For example, a survey conducted of about 1000 coastal caves in the Wet Tropics region failed to locate this species (DotE 2016). In 2011, morphological analyses of four S. flaviventris specimens held at the WAM indicated that they had been misidentified and are likely to belong to the species S. saccolaimus (Milne pers. comm., 2013). The bare-rumped sheath-tail bat is therefore likely to be distributed through the Kimberley region of WA as far west as Broome, however this has not been confirmed through genetic analyses (Milne pers. comm., 2013).	Highly Unlikely, this species is not known from the area. The species is only known from further north in the Kimberley.	EPBC
Xeromys myoides	Water mouse		VU	This small rodent has dark grey silky fur above white below. Three separate populatiuons are known: (Northern Territory, central south Queensland, south-east Queensland). Habitat Includes mangroves, saltmarsh, sedgelands, clay pans, heathlands and freshwater wetlands. Not known to occur in WA (Van Dyck and Strahan 2008).	Highly unlikely, Not known to occur locally or regionally and survey area lacks	EPBC

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
					suitable wetland habitat.	
Mormopterus cobourgianus	North-western free-tailed bat	P1		This bat occurs along the northern WA coast from Exmouth to Dampier Peninsula. Prefers mangroves and adjacent coastal vegetation (Menkhorst and Knight 2004)	Unlikely, no suitable habitat present.	EPBC
Reptiles						
Simoselaps minimus	Dampierland Burrowing snake	P2		This small fossorial snake is known only from Dampier Land, in the south-west Kimberley, WA. Known to occur in coastal dunes and sandy junction between dunes and adjacent *Acacia* shrublands. Occasional records occur from near-coastal Pindan. Poorly known but presumed to be similar to other *Simoselaps*; a sand-swimmer feeding largely or wholly on skinks of the genus *Lerista* (Wilson and Swan 2017).	Likely. Potentially suitable habitat (near-coastal Pindan shrubland on sandy soil) occurs within the survey area.	NatureMap DBCA
Lerista separanda	Dampierland plain slider, skink	P2		Dampier Land, west Kimberley	Likely. Potentially suitable habitat (near-coastal Pindan shrubland on sandy soil) occurs within the project area.	NatureMap DBCA

Fauna likelihood of occurrence assessment of conservation significant fauna identified in the desktop assessment as potentially occurring within the Beagle Bay study area

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Birds						
Apus pacificus	Fork-tailed Swift, Pacific Swift	IA	MI	The Fork-tailed Swift is common in coastal and sub coastal areas between Carnarvon and Augusta including near and offshore islands. There are scattered records along south coast from Denmark east to Cocklebiddy on the Great Australian Bight, and sparsely scattered records inland. They are found across a range of habitats, from inland open plains to wooded areas. They are most often observed over inland plains in Australia, but sometimes recorded over coastal cliffs and beaches as well as urban areas. They have been recorded well out to sea as well as from offshore islands especially when on passage from Indonesia. This species is almost exclusively aerial (DEE 2019).	Unlikely, does not breed within the region. May occur occasionally foraging aerially above the survey area.	NatureMap DBCA
Calidris canutus	Red Knot, Knot	IA	MI	In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry (DEE 2019).	Unlikely, tidal coastline is located in proximity to the project area, however no potentially suitable habitat present within the project area	EPBC
Calidris ferruginea	Curlew Sandpiper	CR	CR	Curlew Sandpipers mainly occur in areas with soft mud conditions, including intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are found inland less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh	Unlikely, no suitable habitat present	EPBC

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				and brackish waters. In WA, they are widespread around coastal and subcoastal plains from Cape Arid to south-west Kimberley Division, but are more sparsely distributed between Carnarvon and Dampier Archipelago (DEE 2019). They are common on the Swan Coastal Plain, particularly near large drying lakes like Thompson and Forrestdale, and Peel Inlet. They are less common along the southern coast to Esperance (Nevill 2013).		
Charadrius veredus	Oriental Plover	IA	MI	The Oriental Plover is a non-breeding visitor to Australia, where the species occurs in both coastal and inland areas, mostly in northern Australia. Most records are along the north-western coast, between Exmouth Gulf and Derby in WA, and there are records at a few scattered sites elsewhere, mainly along the northern coast, such as in the Top End, the Gulf of Carpentaria and on Cape York Peninsula. The species also often occurs further inland on the 'blacksoil' plains of northern WA, the Northern Territory and north-western Queensland. Immediately after arriving in non-breeding grounds in northern Australia, Oriental Plovers spend a few weeks in coastal habitats such as estuarine mudflats and sandbanks, on sandy or rocky ocean beaches or nearby reefs, or in near-coastal grasslands, before dispersing further inland (DEE 2019).	Unlikely, no suitable habitat present	NatureMap DBCA
Erythrotriorchis radiatus	Red Goshawk	VU	VU	The Red Goshawk occurs in coastal and sub-coastal areas in wooded and forested lands of tropical and warm-temperate Australia (Marchant & Higgins 1993). Riverine forests are also used frequently. Such habitats typically support high bird numbers and biodiversity, especially medium to large species which the goshawk requires for prey. The Red Goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within one km of permanent water (DEE 2019).	Unlikely – uncommon in the Dampierland. Local occurrence would be as vagrant	EPBC
Erythrura gouldiae	Gouldian Finch	P4	EN	The Gouldian Finch inhabits open woodlands that are dominated by Eucalyptus trees and support a ground cover	Likely, known to occur locally, may	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				of Sorghum and other grasses (Boekel 1980). The critical components of suitable core habitat for the Gouldian Finch appear to be the presence of favoured annual and perennial grasses (especially Sorghum), a nearby source of surface water and, in the breeding season, unburnt hollow-bearing Eucalyptus trees (especially E. tintinnans, E. brevifolia and E. leucophloia) (Higgins et al. 2006).	forage on seed of grasses when seasonally suitable within the project area.	
Falco peregrinus	Peregrine Falcon	OS		The Peregrine Falcon is uncommon but wide ranging across Australia. Found everywhere from woodlands to open grasslands and coastal cliffs – though less frequently in desert regions – it feeds almost entirely on other birds. It also eats rabbits and other moderate sized mammals, bats and reptiles. The Peregrine Falcon is very territorial during breeding season, the male courting the female with an impressive display of aerobatics (DEE 2019, Morcombe 2004).	Likely, the species is known to persist in the region, however use would be foraging only with no breeding habitat present, such as tall structures or steep topography.	NatureMap DBCA
Glareola maldivarum	Oriental Pratincole	IA	MI	In non-breeding grounds in Australia, the Oriental Pratincole usually inhabits open plains, floodplains or short grassland (including farmland or airstrips), often with extensive bare areas. They often occur near terrestrial wetlands, such as billabongs, lakes or creeks, and artificial wetlands such as reservoirs, salt works and sewage farms, especially around the margins. The species also occurs along the coast, inhabiting beaches, mudflats and islands, or around coastal lagoons (Lloyd and Lloyd 1991).	Unlikely, the survey area is considered marginal habitat at best, as it lacks coastal or wetland areas. May occasionally hawk over or in proximity.	NatureMap DBCA
Gelochelidon nilotica	Gull-billed tern	IA	MI	The Gull-billed Tern is nomadic or migratory species in Australia. Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands, where resources are favourable. They are only rarely found over the ocean. The Gull-billed Tern. Although essentially an inland species, outside breeding season it	Unlikely, no suitable habitat (wetland) present	DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				shows a distinct preference for saltmarshes and lagoons near the coast. Movements are not fully understood but it is common and widespread in Australia (Morcombe 2004).		
Limosa lapponica spp.	Bar-tailed Godwit	VU, IA	VU, MI	Bar-tailed Godwits arrive in Australia each year in August from breeding grounds in the northern hemisphere. Birds are more numerous in northern Australia Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders (Birdlife Australia 2019).	Unlikely, no suitable habitat present	EPBC
Numenius madagascariensis	Eastern Curlew	CR	CR	The Eastern Curlew is most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. The birds are often recorded among saltmarsh and on mudflats fringed by mangroves, sometimes within the mangroves, and in coastal saltworks and sewage farms. In the south west, Eastern Curlews are recorded from Eyre, and there are scattered records from Stokes Inlet to Peel Inlet (Marchant & Higgins 1993). They are uncommon further south of Geraldton, but can be spotted in Alfred Cove, Peel Inlet and the Albany region (Nevill 2013).	Unlikely, no suitable habitat present	EPBC
Numenius minutus	Little Curlew, Little Whimbrel	IA	MI	Little Curlews generally spend the non-breeding season in northern Australia from Port Hedland in WA to the Queensland coast (Minton 2002 pers. comm.). There are records of the species from inland Australia, and widespread but scattered records on the east coast. The Little Curlew is most often found feeding in short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow freshwater pools or areas seasonally inundated. Open woodlands with a grassy or burnt understory, dry saltmarshes, coastal	Unlikely, no suitable habitat present	NatureMap

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				swamps, mudflats or sandflats of estuaries or beaches on sheltered coasts, mown lawns, gardens, recreational areas, ovals, racecourses and verges of roads and airstrips are also used (Higgins & Davies 1996).		
Pandion cristatus	Osprey, eastern osprey	IA	MI	The breeding range of the Eastern Osprey extends around the northern coast of Australia (including many offshore islands) from Albany in WA to Lake Macquarie in NSW; with a second isolated breeding population on the coast of South Australia, extending from Head of Bight east to Cape Spencer and Kangaroo Island. Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands (DEE 2019).	Unlikely, no suitable nesting habitat present, although opportunistic visitation may occur due to near-coastal location of project area.	DBCA
Papasula abbotti	Abbott's Booby		EN	Currently, Abbott's Booby is only known to breed on Christmas Island and to forage in the waters surrounding the island Within Christmas Island, most nests are found in the tall plateau forest on the central and western areas of the island, and in the upper terrace forest of the northern coast. The species was once thought to be restricted to areas above 150 m, mostly on the sides of north-west facing slopes but a survey in 1991 located them in some new areas Some of these areas had been known but were not recorded in a 1981 survey This revised distribution would be due partly to movement of the birds but the survey also discovered previously unknown nesting areas (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	EPBC
Pezoporus occidentalis	Night Parrot		CR	The Night Parrot is a highly elusive nocturnal ground dwelling parrot found in the arid and semi-arid zones of Australia; it is one of only three ground-dwelling parrots in Australia.The Night Parrot was thought to be extinct but in 2013 it was rediscovered in Queensland (Pullen Pullen Reserve). Subsequently, the Night Parrot Recovery Team confirms that there is one population recently recorded in the Diamantina National Park/Pullen Pullen Reserve area in western Queensland, and other recent records in the Wiluna	Highly Unlikely, the species is not known from this region and limited available habitat	EPBC

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				district of central WA, and the Lake Gregory area of northern WA .Purported records at Kalamurina in SA and Goneaway NP in Queensland have not been confirmed (DEE 2019).		
Rostratula australis	Australian Painted Snipe	EN	EN	The Australian Painted Snipe is restricted to Australia with historical records from around the Perth region in WA. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. The nest consists of a scrape in the ground, lined with grasses and leaves. Breeding is often in response to local conditions; generally occurs from September to December. Incubation and care of young is all undertaken by the male only. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter (DEE 2019).	Unlikely, no suitable habitat present	EPBC
Sterna dougallii	Roseate Tern	IA	MI	The Roseate Tern occurs in coastal and marine areas in subtropical and tropical seas. The species inhabits rocky and sandy beaches, coral reefs, sand cays and offshore islands. Birds rarely occur in inshore waters or near the mainland, usually venturing into these areas only accidentally, when nesting islands are nearby (Higgins & Davies 1996). The usually roosts or loafs in the intertidal zone on islands, including on the upper sections of beaches, above the high-water mark (but still in the wash-zone) on banks, spits and bars, usually of coral or sand. Birds occasionally roost on exposed rubble banks or on rocky features, such as cliffs, headlands, plateaux, stacks and ledges, among rocks or in crags (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA
Tringa brevipes	Grey-tailed Tattler	P4, IA	MI	Within Australia, the Grey-tailed Tattler has a primarily northern coastal distribution and is found in most coastal regions (Higgins & Davies 1996). The Grey-tailed Tattler is often found on sheltered coasts with reefs and rock platforms or with intertidal mudflats. It can also be found at	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				intertidal rocky, coral or stony reefs as well as platforms and islets that are exposed at low tide (DEE 2018).		
Tringa nebularia	Common Greenshank, greenshank	IA	MI	The Common Greenshank is found in a wide variety of inland wetlands and coastal habitats of varying salinity. It occurs in sheltered coastal areas typically with large mudflats and saltmarsh, mangroves or seagrass, including embayments, harbours, river estuaries, deltas and lagoons, but less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats, and artificial wetlands. They occur around most of the coast from Cape Arid in the south to Carnarvon in the north-west (DEE 2018), and are moderately common here given suitable habitat. They can be found in areas including Wannamal Lake, many Perth lakes, Alfred Cove, Peel Inlet, Vasse and Harvey Estuaries, and the Albany and Esperance regions (Nevill 2013).	Unlikely, tidal coastline is located in proximity to the project area, however no potentially suitable habitat present within the project area	NatureMap DBCA
Tyto novaehollandiae kimberli	Masked Owl	P1	VU	The range of the Masked Owl is a broad coastal band around most of mainland Australia and throughout Tasmania, and for the most part is less than 300 km from the coast. Population numbers are low on the mainland and several states give this species special conservation status. The Masked Owl inhabits heavy forests, and will hunt over open woodlands, timbered waterways and open country on the fringe of these areas. The main requirements are tall trees with suitable hollows for nesting and roosting and adjacent areas for foraging. Masked Owls are territorial, and pairs remain in or near the territory all year round (Birdlife Australia 2019)	Highly Unlikely, this species is not known from this region. All known records are from central and Northern Kimberley.	EPBC
Mammals						
Macrotis lagotis	Bilby, Dalgyte, Ninu	VU	VU	In WA the species is restricted to the north, including the Pilbara, Sandy and Gibson Deserts. The Greater Bilby usually spends the daytime in burrows, often built against	Likely, the species is known to occur locally based on	EPBC NatureMap

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				termite mounds, spinifex hummock or shrubs (Van Dyck and Strahan 2008). Extant population occur in a variety of habitats, usually on landforms with level to low slope topography and light to medium soils. It occupies three major vegetation types; open tussock grassland on uplands and hills, mulga woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas. Laterite and rock feature substrates are an important part of the species' habitat. These habitat support shrub species, such as Acacia kempeana, A. hilliana and A. rhodophloia, which have root-dwelling larvae that provide a constant food source. The current occurrence of this species is strongly associated with higher rainfall and temperatures, which promote areas of higher plant and food production (DEE 2019	previous records. No evidence of activity was recorded within the project area, however based on close proximity of records, habitat characteristics, this species is likely forage or move through the project area, and the project area habitat is potential burrowing habitat. Being close to the community may impact on the species numbers and distribution.	
Saccolaimus saccolaimus nudicluniatus	Bare-rumped Sheath-tailed Bat,	P3	VU	The Bare-rumped Sheathtail Bat occurs mostly in lowland areas, typically in a range of woodland, forest and open environments (DotE 2016). The Bare-rumped Sheathtail Bat has been suggested to forage over habitat edges such as the edge of rainforest and in forest clearings (Churchill 1998). There is no information is available on foraging habitat shifts between the dry and wet seasons. The small number of confirmed roosts located in Australia have all been in tree hollows. Overseas other subspecies (perhaps distinct species to the form(s) occurring in Australia) commonly roost in caves, overhangs and man-made structures. However, in Australia no individuals have been found roosting in caves. For example, a survey conducted of	Highly Unlikely, this species is not known from the area. The species is only known from further north in the Kimberley.	EPBC

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				about 1000 coastal caves in the Wet Tropics region failed to locate this species (DotE 2016). In 2011, morphological analyses of four S. flaviventris specimens held at the WAM indicated that they had been misidentified and are likely to belong to the species S. saccolaimus (Milne pers. comm., 2013). The bare-rumped sheath-tail bat is therefore likely to be distributed through the Kimberley region of WA as far west as Broome, however this has not been confirmed through genetic analyses (Milne pers. comm., 2013).		
Vespadelus douglasorum	Yellow-lipped Cave Bat	P2		Confined to the Western Kimberley moistly in relatively high rainfall areas (> 800mm). Forages in woodlands, particularly riparian vegetation in proximity to rocky habitat where in will roost in caves and crevices.	Unlikely. The survey area represent the western edge of the species known range. May occasionally forage locally although unlikely to roost.	NatureMap DBCA
Xeromys myoides	Water Mouse		VU	The water mouse occurs in three regions of coastal Australia: The Northern Territory, central south Queensland and south-east Queensland. they require similiar habitat including mangroves and the associated saltmarsh, sedgelands, clay pans, heathlands and freshwater wetlands. The main habitat difference at each location is the littoral, supralittoral and terrestrial vegetation which differs in structure and composition. These differences dictate the species' nesting behaviour (DEE 2019).	Highly unlikely, Not known to occur locally or regionally and survey area lacks suitable wetland habitat.	EPBC NatureMap

Fauna likelihood of occurrence assessment of conservation significant fauna identified in the desktop assessment as potentially occurring within the Bidyadanga study area

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Birds						
Actitis hypoleucos	Common Sandpiper	IA	MI	The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow, and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags (DEE 2019)	Unlikely, no suitable habitat present	NatureMap DBCA
Apus pacificus	Fork-tailed Swift	IA	MI	coastal areas between Carnarvon and Augusta including near and offshore islands. There are scattered records along south coast from Denmark east to Cocklebiddy on the Great Australian Bight, and sparsely scattered records inland. They are found across a range of habitats, from inland open plains to wooded areas. They are most often observed over inland plains in Australia, but sometimes recorded over coastal cliffs and beaches as well as urban areas. They have been recorded well out to sea as well as from offshore islands especially when on passage from Indonesia. This species is almost exclusively aerial (DEE 2019).	Unlikely, typically solely areal very rarely utilising terrestrial habitats	NatureMap DBCA
Arenaria interpres	Ruddy Turnstone	IA	MI	In Australia, Ruddy Turnstones are widespread around the coast of the mainland and off-shore islands. They breed on the northern coasts of Europe, Asia and North America. They are found on coastlines around the world, when not breeding or on passage. They are found singly or in small groups along the coastline and only occasionally inland. They are mainly found on exposed rocks or reefs, often with	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				shallow pools, and on beaches. In the north, they are found in a wider range of habitats, including mudflats (DEE 2019).		
Calidris acuminata	Sharp-tailed Sandpiper	IA	Ma, Mi	In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands, and coastal areas with much beachcast seaweed. Sometimes they occur on rocky shores and rarely on exposed reefs (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap DBCA
Calidris alba	Sanderling	IA	MI	In Australia, the species is almost always found on the coast, mostly on open sandy beaches exposed to open sea-swell, and also on exposed sandbars and spits, and shingle banks, where they forage in the wave-wash zone and amongst rotting seaweed. Sanderlings also occur on beaches that may contain wave-washed rocky outcrops. Less often the species occurs on more sheltered sandy shorelines of estuaries, inlets and harbours (DEE 2019).	Unlikely, no suitable habitat present	NatureMap DBCA
Calidris canutus	Red Knot, Knot	EN	EN	In Australasia the Red Knot mainly inhabits intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the	Unlikely, no suitable habitat present	PMST NatureMap

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (DEE 2018). They are found near mudflats and estuaries from Murchison to Bunbury but are then uncommon from Wilson Inlet to Esperance. In the Perth region they are mainly found in Alfred Cove and Peel Inlet (Nevill 2013).		
Calidris ferruginea	Curlew Sandpiper	CR	CR	Curlew Sandpipers mainly occur in areas with soft mud conditions, including intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are found inland less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. In WA, they are widespread around coastal and subcoastal plains from Cape Arid to south-west Kimberley Division, but are more sparsely distributed between Carnarvon and Dampier Archipelago (DEE 2019). They are common on the Swan Coastal Plain, particularly near large drying lakes like Thompson and Forrestdale, and Peel Inlet. They are less common along the southern coast to Esperance (Nevill 2013).	Unlikely, no suitable habitat present	PMST NatureMap DBCA
Calidris ruficollis	Red-necked Stint	IA	MI	The Red-necked Stint breeds in north-eastern Siberia and northern and western Alaska. It follows the East Asian-Australasian Flyway to spend the southern summer months in Australia. It is found widely in Australia, except in the arid inland. In Australia, Red-necked Stints are found on the coast, in sheltered inlets, bays, lagoons, estuaries, intertidal mudflats and protected sandy or coralline shores (Pizzey and Knight 2012).	Unlikely, no suitable habitat present	NatureMap DBCA
Calidris tenuirostris	Great Knot	CR	CR	The Great Knot has been recorded around the entirety of the Australian coast, with a few scattered records inland. It is now absent from some sites along the south coast where	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				it used to be a regular visitor (Garnett and Crowley 2000). The greatest numbers are found in northern Australia; where the species is common on the coasts of the Pilbara and Kimberley, from the Dampier Archipelago to the Northern Territory border, and in the Northern Territory from Darwin and Melville Island, through Arnhem Land to the south-east Gulf of Carpentaria. In Australasia, the species typically prefers sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbors, estuaries and lagoons (DEE 2019).		
Charadrius leschenaultii	Greater Sand Plover	VU	VU	Australia, the Greater Sand Plover occurs in coastal areas in all states, though the greatest numbers occur in northern Australia, especially the north-west (Marchant & Higgins 1993). In northern Australia, the species is especially widespread between North West Cape and Roebuck Bay in Western Australia; there are sparsely scattered records from the largely inaccessible area between Roebuck Bay and Darwin, but it often occurs in the Top End of the Northern Territory, including on Groote Eylandt (DEE 2019).	Unlikely, no suitable habitat present	NatureMap DBCA
Charadrius mongolus	Lesser Sand Plover	EN	EN	Within Australia, the Lesser Sand-Plover is widespread in coastal regions, and has been recorded in all states. It mainly occurs in northern and eastern Australia, in south-eastern parts of the Gulf of Carpentaria, western Cape York Peninsula and islands in Torres Strait, and along the entire east coast, though it occasionally also occurs inland. It is most numerous in Queensland and NSW. The species has also been recorded on Lord Howe Island, Norfolk Island and Christmas Island, Indian Ocean. In non-breeding grounds in Australia, this species usually occurs in coastal littoral and estuarine environments. It inhabits large intertidal sandflats or mudflats in sheltered bays, harbors and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. It also sometime occurs in short saltmarsh or among mangroves. The species also	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				inhabits saltworks and near-coastal saltpans, brackish swamps and sandy or silt islands in river beds (Marchant & Higgins 1993). In north-western Australia, the species appears to use the Port Hedland saltworks in preference to nearby beaches.		
Charadrius veredus	Oriental Plover	IA	MI	The Oriental Plover is a non-breeding visitor to Australia, where the species occurs in both coastal and inland areas, mostly in northern Australia. Most records are along the north-western coast, between Exmouth Gulf and Derby in Western Australia, and there are records at a few scattered sites elsewhere, mainly along the northern coast, such as in the Top End, the Gulf of Carpentaria and on Cape York Peninsula. The species also often occurs further inland on the 'blacksoil' plains of northern Western Australia, the Northern Territory and north-western Queensland. Immediately after arriving in non-breeding grounds in northern Australia, Oriental Plovers spend a few weeks in coastal habitats such as estuarine mudflats and sandbanks, on sandy or rocky ocean beaches or nearby reefs, or in near-coastal grasslands, before dispersing further inland (DEE 2019).	Unlikely, no suitable habitat present	NatureMap DBCA
Erythrotriorchis radiatus	Red Goshawk	VU	VU	The Red Goshawk occurs in coastal and sub-coastal areas in wooded and forested lands of tropical and warm-temperate Australia (Marchant & Higgins 1993). Riverine forests are also used frequently. Such habitats typically support high bird numbers and biodiversity, especially medium to large species which the goshawk requires for prey. The Red Goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within one km of permanent water (DEE 2019).	Unlikely, no suitable habitat present	EPBC
Erythrura gouldiae	Gouldian Finch	P4	EN	The Gouldian Finch inhabits open woodlands that are dominated by Eucalyptus trees and support a ground cover of Sorghum and other grasses (Boekel 1980). The critical components of suitable core habitat for the Gouldian Finch	Unlikely, no suitable habitat present and typically the	EPBC

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				appear to be the presence of favoured annual and perennial grasses (especially Sorghum), a nearby source of surface water and, in the breeding season, unburnt hollow-bearing Eucalyptus trees (especially E. tintinnans, E. brevifolia and E. leucophloia) (Higgins et al. 2006).	species does not occur south of Broome	
Fregata ariel	Lesser Frigatebird	IA	Ma, Mi	The Lesser Frigatebird is said to be the most common and widespread frigatebird in Australian seas (DAWE 2020). It is common in tropical seas, breeding on remote islands, including Christmas Island in the Indian Ocean in recent years. These birds are most likely to be seen from the mainland prior to the onset of a tropical cyclone, and once this abates they disappear again.	Highly Unlikely, no habitat present with thee species utilising marine environments	NatureMap DBCA
Gelochelidon nilotica	Gull-billed Tern	MI	MI	The Gull-billed Tern is nomadic or migratory species in Australia. Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands, where resources are favourable (Morcombe 2004). They are only rarely found over the ocean. The Gull-billed Tern, although essentially an inland species, outside breeding season it shows a distinct preference for saltmarshes and lagoons near the coast. Movements are not fully understood but it is common and widespread in Australia (Morcombe 2004).	Highly Unlikely, no suitable habitat present	
Glareola maldivarum	Oriental Pratincole)	MI	MI	In non-breeding grounds in Australia, the Oriental Pratincole usually inhabits open plains, floodplains or short grassland (including farmland or airstrips), often with extensive bare areas. They often occur near terrestrial wetlands, such as billabongs, lakes or creeks, and artificial wetlands such as reservoirs, saltworks and sewage farms, especially around the margins. The species also occurs along the coast, inhabiting beaches, mudflats and islands, or around coastal lagoons (Lloyd and Lloyd 1991).	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Hydroprogne caspia	Caspian Tern	IA	MI	The Caspian Tern is mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs (DEE 2019).	Highly Unlikely, no suitable habitat present	NatureMap DBCA
Limicola falcinellus	Broad-billed Sandpiper	IA	MI	In Western Australia, few records occur in the south-west, but the Broad-billed Sandpiper may be regular in small numbers at scattered locations, from Warden Lake Nature Reserve and Coramup Creek to Guraga Lake Nature Reserve and Hurstview Lake. They mostly occur on the coasts of the Pilbara and Kimberley between Onslow and Broome, but are also recorded north to the mouth of Lawley River, and inland at Lake Daley. In the Northern Territory, they are an irregular and uncommon visitor near Darwin, though previously considered common at times.	Unlikely, no suitable habitat present	NatureMap DBCA
Limosa lapponica (all sub-species)	Bar-tailed Godwit	VU, IA	VU, MI	Bar-tailed Godwits arrive in Australia each year in August from breeding grounds in the northern hemisphere. Birds are more numerous in northern Australia Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders (Birdlife Australia 2019).	Unlikely, no suitable habitat present	NatureMap DBCA PMST
Limosa limosa	Black-tailed Godwit	IA	MI	In Australia the Black-tailed Godwit has a primarily coastal habitat environment. The species is commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand or shell-grit; occasionally recorded on rocky coasts or coral islets. The use of habitat often depends on the stage of the	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				tide. It is also found in shallow and sparsely vegetated, near-coastal, wetlands; such as saltmarsh, saltflats, river pools, swamps, lagoons and floodplains. There are a few inland records, around shallow, freshwater and saline lakes, swamps, dams and bore-overflows. They also use lagoons in sewage farms and saltworks (Higgins & Davies 1996).		
Numenius madagascariensis	Eastern Curlew	CR	CR	The Eastern Curlew is most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. The birds are often recorded among saltmarsh and on mudflats fringed by mangroves, sometimes within the mangroves, and in coastal saltworks and sewage farms. In the south west, Eastern Curlews are recorded from Eyre, and there are scattered records from Stokes Inlet to Peel Inlet (Marchant & Higgins 1993). They are uncommon further south of Geraldton, but can be spotted in Alfred Cove, Peel Inlet and the Albany region (Nevill 2013).	Unlikely, no suitable habitat present	NatureMap DBCA PMST
Numenius minutus	Little Curlew, Little Whimbrel	IA	MI	Little Curlews generally spend the non-breeding season in northern Australia from Port Hedland in Western Australia to the Queensland coast (Minton 2002 pers. comm.). There are records of the species from inland Australia, and widespread but scattered records on the east coast. The Little Curlew is most often found feeding in short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow freshwater pools or areas seasonally inundated. Open woodlands with a grassy or burnt understory, dry saltmarshes, coastal swamps, mudflats or sandflats of estuaries or beaches on sheltered coasts, mown lawns, gardens, recreational areas, ovals, racecourses and verges of roads and airstrips are also used (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Numenius phaeopus	Whimbrel	IA	MI	The Whimbrel is often found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, un-vegetated mudflats. It is occasionally found on sandy or rocky beaches, on coral or rocky islets, or on intertidal reefs and platforms. It has been infrequently recorded using saline or brackish lakes near coastal areas. It also used saltflats with saltmarsh, or saline grasslands with standing water left after high spring-tides, and in similar habitats in sewage farms and saltfields (Higgins & Davies 1996). There are a small number of inland records from saline lakes and canegrass swamps. It has also been recorded in coastal dunes and a football field.	Unlikely, no suitable habitat present	NatureMap DBCA
Oceanites oceanicus	Wilson's Storm-petrel			In Australia, most reports of the Wilson's Storm-Petrel are from the edge of the continental shelf and during autumn. The species is known to breed on Heard Island, where it is described as abundant The species is common off the coast of Queensland during May to September, but are scarce off south-east Queensland during the north and southwards migrations.During this time, the species is recorded more regularly off New South Wales (NSW), Victoria, Tasmania and South Australia; with maximum abundances in March to June and October to November (DEE 2018)Off Western Australia and the Northern Territory, Wilson's Storm-Petrels are mainly observed along the coast during migration (Marchant & Higgins 1990	Highly Unlikely, no habitat present with thee species utilising marine environments	NatureMap DBCA
Pandion cristatus	Osprey, Eastern Osprey	IA	MI	The breeding range of the Eastern Osprey extends around the northern coast of Australia (including many offshore islands) from Albany in Western Australia to Lake Macquarie in NSW; with a second isolated breeding population on the coast of South Australia, extending from Head of Bight east to Cape Spencer and Kangaroo Island. Eastern Ospreys occur in littoral and coastal habitats and	Unlikely, no suitable habitat present, however opportunistic use may occur	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				terrestrial wetlands of tropical and temperate Australia and offshore islands (DEE 2019).		
Plegadis falcinellus	Glossy Ibis			Within Australia, the Glossy Ibis is generally located east of the Kimberley in Western Australia and Eyre Peninsula in South Australia. The species is also known to be patchily distributed in the rest of Western Australia. The species is rare or a vagrant in Tasmania (DEE 2018)	Unlikely, no suitable habitat present	NatureMap DBCA
Pluvialis fulva	Pacific Golden Plover	IA	MI	The Pacific Golden Plover breeds on the Arctic tundra in western Alaska. It winters in South America and islands of the Pacific Ocean to India, Indonesia and Australia. In Australia it is widespread along the coastline. Pacific Golden Plovers usually occur on beaches, mudflats and sandflats (sometimes in vegetation such as mangroves, low saltmarsh such as Sarcocornia, or beds of seagrass) in sheltered areas including harbours, estuaries and lagoons, and also in evaporation ponds in saltworks. The species is also sometimes recorded on islands, sand and coral cays and exposed reefs and rocks (DEE 2019)	Unlikely, no suitable habitat present	NatureMap DBCA
Pluvialis squatarola	Grey Plover	IA	MI	The Grey Plover breeds around the Arctic regions and migrates to the southern hemisphere, being a regular summer migrant to Australia, mostly to the west and south coasts. It is generally sparse but not uncommon in some areas. It is occasionally found inland. It is almost entirely coastal, being found mainly on marine shores, inlets, estuaries and lagoons with large tidal mudflats or sandflats for feeding, sandy beaches for roosting, and also on rocky coasts (Birdlife Australia 2019).	Unlikely, no suitable habitat present	NatureMap DBCA
Papasula abbotti	Abbott's Booby			Currently, Abbott's Booby is only known to breed on Christmas and to forage in the waters surrounding the island Within Christmas Island, most nests are found in the tall plateau forest on the central and western areas of the island, and in the upper terrace forest of the northern coast. The species was once thought to be restricted to areas above 150 m, mostly on the sides of north-west facing	Highly Unlikely, no habitat present and the species utilises marine environments	PMST

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				slopes, but a survey in 1991 located them in some new Some of these areas had been known but were not recorded in a 1981 survey.This revised distribution would be due partly to movement of the birds but the survey also discovered previously unknown nesting area (DEE 2019).		
Pezoporus occidentalis	Night Parrot			The Night Parrot is a highly elusive nocturnal ground dwelling parrot found in the arid and semi-arid zones of Australia; it is one of only three ground-dwelling parrots in Australia.The Night Parrot was thought to be extinct but in 2013 it was rediscovered in Queensland (Pullen Pullen Reserve). Subsequently, the Night Parrot Recovery Team confirms that there is one population recently recorded in the Diamantina National Park/Pullen Pullen Reserve area in western Queensland, and other recent records in the Wiluna district of central WA, and the Lake Gregory area of northern WA (Burbidge 2018). Purported records at Kalamurina in SA and Goneaway NP in Queensland have not been confirmed (DEE 2019).	Unlikely, no habitat present and the species is not known from this region	PMST
Rostratula australis	Australian Painted Snipe	EN	EN	The Australian Painted Snipe is restricted to Australia with historical records from around the Perth region in Western Australia. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. The nest consists of a scrape in the ground, lined with grasses and leaves. Breeding is often in response to local conditions; generally occurs from September to December. Incubation and care of young is all undertaken by the male only. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter (DEE 2019).	Unlikely, no suitable habitat present	PMST
Polytelis alexandrae	Princess Parrot	P4	V	The Princess Parrot is confined to arid regions of Western Australia, the Northern Territory, and South Australia. The Princess Parrot inhabits sand dunes and sand flats in the	Unlikely, no suitable habitat present, this	NatureMap

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				arid zone of western and central Australia. It occurs in open savannah woodlands and shrublands that usually consist of scattered stands of Eucalyptus (including E. gongylocarpa, E. chippendalei and mallee species), Casuarina or Allocasuarina trees; an understorey of shrubs such as Acacia (especially A. aneura), Cassia, Eremophila, Grevillea, Hakea and Senna; and a ground cover dominated by Triodia species. It also frequents Eucalyptus or Allocasuarina trees in riverine or littoral areas (DEE 2019).	species may opportunistically utilise the habitats present but typically resides further inland is sandy desert environs.	
Sterna hirundo	Common Tern	IA	MI	In northern Australia there are scattered records in the Kimberley Division of Western Australia, but the species has recently been found to be one of the most abundant species recorded in ground surveys of waterbirds of the Top End of the Northern Territory. In Australia, they are recorded in all marine zones, but are commonly observed in near-coastal waters, both on ocean beaches, platforms and headlands and in sheltered waters, such as bays, harbours and estuaries with muddy, sandy or rocky shores (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA
Sternula albifrons	Little Tern	IA	MI	In Australia, Little Terns inhabit sheltered coastal environments, including lagoons, estuaries, river mouths and deltas, lakes, bays, harbours and inlets, especially those with exposed sandbanks or sand-spits, and also on exposed ocean beaches (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA
Sula leucogaster	Brown Booby	IA	MI	In Australia, the Brown Booby is found from Bedout Island in Western Australia, around the coast of the Northern Territory to the Bunker Group of islands in Queensland with occasional reports further south in New South Wales and Victoria. The species is reported further south to Tweed Heads, NSW, and to near Onslow, Western Australia and may be becoming more common in these areas. The Brown Booby uses both marine and terrestrial habitat. The species occurs in, but is not restricted to, tropical waters of all major oceans, often staying close to breeding islands (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Thalasseus bergii	Crested Tern	IA	MI	Crested Terns occur singularly or in flocks in coastal areas, estuaries, inlets, islands and occasionally on large inland lakes or rivers. They are often seen perching with gulls on beaches, sand spits or jetties. Crested Terns are widespread from the south coast of Africa north to Asia, south to Australia and east to Polynesia. They also occur on many islands in the Indian and Pacific Oceans (DEE 2018).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA
Tringa brevipes	Grey-tailed Tattler	P4, IA	MI	Within Australia, the Grey-tailed Tattler has a primarily northern coastal distribution and is found in most coastal regions (Higgins & Davies 1996). The Grey-tailed Tattler is often found on sheltered coasts with reefs and rock platforms or with intertidal mudflats. It can also be found at intertidal rocky, coral or stony reefs as well as platforms and islets that are exposed at low tide (DEE 2018).	Unlikely, no suitable habitat present	NatureMap DBCA
Tringa nebularia	Common Greenshank, greenshank	IA	MI	The Common Greenshank is found in a wide variety of inland wetlands and coastal habitats of varying salinity. It occurs in sheltered coastal areas typically with large mudflats and saltmarsh, mangroves or seagrass, including embayments, harbours, river estuaries, deltas and lagoons, but less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats, and artificial wetlands. They occur around most of the coast from Cape Arid in the south to Carnarvon in the north-west (DEE 2018), and are moderately common here given suitable habitat. They can be found in areas including Wannamal Lake, many Perth lakes, Alfred Cove, Peel Inlet, Vasse and Harvey Estuaries, and the Albany and Esperance regions (Nevill 2013).	Unlikely, no suitable habitat present	NatureMap DBCA
Tringa stagnatilis	Marsh Sandpiper, little greenshank	IA	MI	The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also	Unlikely, no suitable habitat present	NatureMap

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes. In north Australia they prefer intertidal mudflats (Higgins & Davies 1996), although surveys in Kakadu National Park recorded more birds around shallow freshwater lakes than in areas influenced by tide. At the Top End they often use ephemeral pools on inundated freshwater and tidal floodplains (Higgins & Davies 1996). They are found infrequently around mangroves (Higgins & Davies 1996).		
Tyto novaehollandiae kimberli	Masked Owl	P1	VU	The range of the Masked Owl is a broad coastal band around most of mainland Australia and throughout Tasmania, and for the most part is less than 300 km from the coast. Population numbers are low on the mainland and several states give this species special conservation status. The Masked Owl inhabits heavy forests, and will hunt over open woodlands, timbered waterways and open country on the fringe of these areas. The main requirements are tall trees with suitable hollows for nesting and roosting and adjacent areas for foraging. Masked Owls are territorial, and pairs remain in or near the territory all year round (Birdlife Australia 2019)	Highly Unlikely, this species is not known from this region. All known records are from central and Northern Kimberley.	PMST
Xenus cinereus	Terek Sandpiper	IA	MI	In Australia, the Terek Sandpiper has a primarily coastal distribution, with occasional records inland. It is more widespread and common in northern and eastern Australia than southern Australia (DEE 2018). The Terek Sandpiper mostly forages in the open, on soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons. The species has also been recorded on islets, mudbanks, sandbanks and spits, and near mangroves and occasionally in samphire (Halosarcia spp.). Birds are seldom near the edge of water, however, birds may wade into the water (Marchant & Higgins 1993).	Unlikely, no suitable habitat present	NatureMap DBCA
Mammals						

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Isoodon auratus subsp. auratus	Golden Bandicoot (mainland), Wintarru			It previously occurred throughout central Australia, but is now restricted to Barrow Island (Isoodon auratus barrowensis) and the Kimberley (offshore islands and the mainland) and Marchinbar Island (offshore Arnhem Land) (Isoodon auratus auratus). During the day it rests in dense vegetation or other shelter. During the night it forages by digging for succulents, invertebrates and plant roots (DEE 2019).	Highly Unlikely, this species no longer persists in this region on the mainland	NatureMap DBCA
Lagorchestes conspicillatus subsp. leichardti	Spectacled Hare-wallaby (mainland			This subspecies was formerly distributed on Barrow Island and on Hermite Island in the Montebello Group, Western Australia. It is now restricted to Barrow Island and Boomerang Island, which is joined to Barrow at low tide .As the species occurs only on Barrow and Boomerang Islands, the extent of occurrence can be calculated to be approximately 233 km², the size of Barrow Island (DEE 2019).	Unlikely, this species known from the region with recent records present further east of the project area. However due to the close proximity to the community and town dogs it is unlikely the species would be present	NatureMap DBCA
Macrotis lagotis	Bilby, Dalgyte, Ninu	VU	VU	In Western Australia the species is restricted to the north, including the Pilbara, Sandy and Gibson Deserts. The Greater Bilby usually spends the daytime in burrows, often built against termite mounds, spinifex hummock or shrubs (Van Dyck and Strahan 2008). Extant population occur in a variety of habitats, usually on landforms with level to low slope topography and light to medium soils. It occupies three major vegetation types; open tussock grassland on uplands and hills, mulga woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas. Laterite and rock feature substrates are an	Unlikely, this species known from the region with recent records present further east of the project area. However due to the close proximity to the community and	NatureMap DBCA PMST

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				important part of the species' habitat. These habitat support shrub species, such as Acacia kempeana, A. hilliana and A. rhodophloia, which have root-dwelling larvae that provide a constant food source. The current occurrence of this species is strongly associated with higher rainfall and temperatures, which promote areas of higher plant and food production (DEE 2019).	town dogs it is unlikely the species would be present	
Macroderma gigas	Ghost bat	VU	VU	The Ghost Bat occurs in a wide range of habitats, and requires an undisturbed cave, deep fissure or disused mine shaft in which to roost. It is patchily distributed across Australia, and is sensitive to disturbance (Van Dyck and Strahan 2008).	Highly Unlikely, this species no longer persists in this region and no habitat is present	PMST
Mormopterus cobourgianus	North-western free-tailed bat			It prefers to forage in the tropical savannas of Northern Australia. It is also found in urban areas, using artificial lights to forage for the insects attracted to them. They will fly and forage in groups of two or more individuals. Its foraging style utilizes fast, direct flight suited for open areas or above canopies. It is insectivorous, consuming beetles, bugs, moths, lacewings, grasshoppers, cockroaches, flies and leafhoppers It is one of the only species of bat in Australia that can be heard when foraging. Its echolocation frequency is relatively low (15-25kHz), overlapping with the upper range of sounds audible to humans. It is nocturnal, roosting in sheltered places during the day such as tree hollows or caves. These roosts can consist of many individuals, as it is a colonial species (Kutt et al 2008).	Highly Unlikely, this species requires mangrove hollows to shelter. No habitat present	DBCA
Saccolaimus saccolaimus nudicluniatus	Bare-rumped Sheath-tailed Bat,	P3	VU	The Bare-rumped Sheathtail Bat occurs mostly in lowland areas, typically in a range of woodland, forest and open environments (DotE 2016). The Bare-rumped Sheathtail Bat has been suggested to forage over habitat edges such as the edge of rainforest and in forest clearings (Churchill 1998). There is no information is available on foraging habitat shifts between the dry and wet seasons. The small number of confirmed roosts located in Australia have all	Highly Unlikely, this species has not been recorded in this region and is only known from far northern Kimberley	PMST

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				been in tree hollows. Overseas other subspecies (perhaps distinct species to the form(s) occurring in Australia) commonly roost in caves, overhangs and man-made structures. However, in Australia no individuals have been found roosting in caves. For example, a survey conducted of about 1000 coastal caves in the Wet Tropics region failed to locate this species (DotE 2016). In 2011, morphological analyses of four S. flaviventris specimens held at the Western Australian Museum indicated that they had been misidentified and are likely to belong to the species S. saccolaimus (Milne pers. comm., 2013). The bare-rumped sheath-tail bat is therefore likely to be distributed through the Kimberley region of Western Australia as far west as Broome, however this has not been confirmed through genetic analyses (Milne pers. comm., 2013).		
Xeromys myoides	Water mouse			The water mouse occurs in three regions of coastal Australia: The Northern Territory, central south Queensland and south-east Queensland. they require similiar habitat including mangroves and the associated saltmarsh, sedgelands, clay pans, heathlands and freshwater wetlands. The main habitat difference at each location is the littoral, supralittoral and terrestrial vegetation which differs in structure and composition. These differences dictate the species' nesting behaviour (DEE 2019).	Highly unlikely the species is not known from this region and no habitat present	PMST
Reptiles						
Ctenotus angusticeps	Airlie Island Ctenotus, Northwestern coastal Ctenotus)	P3		The Airlie Island Ctenotus is known from approximately 12 locations in north-west WA (DEE 2018). On the mainland, the Airlie Island Ctenotus generally inhabits the landward fringe of salt marsh communities in samphire shrubland dominated by chenopod vegetation or marine couch grassland (Maryan et al. 2013) in the intertidal zone along mangrove (Grey Mangrove (Avicennia marina) with occasional Red Mangrove (Rhizophora stylosa)) margins, however, subtle differences in vegetation/topography exist	Highly Unlikely, this species requires mangrove mudflat margins to shelter. No habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				among sites where the species has been recorded (Biologic 2012).		

Fauna likelihood of occurrence assessment of conservation significant fauna identified in the desktop assessment as potentially occurring within the Djarindjin study area

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Birds						
Actitis hypoleucos	Common Sandpiper	IA	Ma, Mi	The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow, and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags (Geering et al. 2007; Higgins & Davies 1996). Generally the species forages in shallow water and on bare soft mud at the edges of wetlands; often where obstacles project from substrate, e.g. rocks or mangrove roots. Birds sometimes venture into grassy areas adjoining wetlands (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap DBCA
Apus pacificus	Fork-tailed Swift	IA	Ma, Mi	In WA there are sparsely scattered records along the south coast, ranging from the Eyre Bird Observatory and west to Denmark. They are widespread in coastal and sub-coastal areas between Augusta and Carnarvon, including some on nearshore and offshore islands. This species is almost exclusively aerial, flying less than 1 m to at least 300 m above ground. This species is considered rare in the south-west region (DAWE 2020).	Unlikely, typically solely areal very rarely utilising terrestrial habitats	NatureMap
Anous stolidus (all sub-species)	Common Noddy	IA	Ma, Mi	The Common Noddy is found in tropical and sub-tropical seas off the west, north and east coasts of Australia, from the Abrolhos Islands in WA to the islands of the Great Barrier Reef in Qld, as well as Norfolk and Lord Howe Islands. Some are seen almost annually in NSW as far	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				south as Sydney. It also ranges across tropical parts of the Pacific, Indian and Atlantic Oceans (DAWE 2020).		
Arenaria interpres	Ruddy Turnstone	IA	Ma, Mi	In Australasia, the Ruddy Turnstone is mainly found on coastal regions with exposed rock coast lines or coral reefs. It also lives near platforms and shelves, often with shallow tidal pools and rocky, shingle or gravel beaches. It can, however, be found on sand, coral or shell beaches, shoals, cays and dry ridges of sand or coral. It has occasionally been sighted in estuaries, harbours, bays and coastal lagoons, among low saltmarsh or on exposed beds of seagrass, around sewage ponds and on mudflats (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap DBCA
Calidris acuminata	Sharp-tailed Sandpiper	IA	Ma, Mi	In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands, and coastal areas with much beachcast seaweed. Sometimes they occur on rocky shores and rarely on exposed reefs (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Calidris alba	Sanderling	IA	Ma, Mi	In Australia, the species is almost always found on the coast, mostly on open sandy beaches exposed to open sea-swell, and also on exposed sandbars and spits, and shingle banks, where they forage in the wave-wash zone and amongst rotting seaweed. Sanderlings also occur on beaches that may contain wave-washed rocky outcrops. Less often the species occurs on more sheltered sandy shorelines of estuaries, inlets and harbours. Rarely, they are recorded in near-coastal wetlands, such as lagoons, hypersaline lakes, saltponds and samphire flats. There are rare inland records from sandy shores of ephemeral brackish lakes and brackish river-pools (Higgins & Davies 1996). They roost on/behind: bare sand high on the beach, clumps of washed-up kelp, coastal dunes, rocky reefs and ledges (Higgins & Davies 1996). Breeding habitat is usually open ground, sometimes on raised hummocks or ridges, in the Arctic tundra of Greenland, Canada and Siberia (Cramp 1985; Pringle 1987).	Unlikely, no suitable habitat present	NatureMap DBCA
Calidris canutus	Red Knot, Knot	IA, En	Ma, Mi, En	In Australasia the Red Knot mainly inhabit intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap DBCA PMST
Calidris ferruginea	Curlew Sandpiper	IA, Cr	Ma, Mi, Cr	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less	Unlikely, no suitable habitat present	NatureMap DBCA PMST

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters (Higgins & Davies 1996)		
Calidris ruficollis	Red-necked Stint	IA	Ma, Mi	In Australasia, the Red-necked Stint is mostly found in coastal areas, including in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores. Occasionally they have been recorded on exposed or ocean beaches, and sometimes on stony or rocky shores, reefs or shoals. They also occur in saltworks and sewage farms; saltmarsh; ephemeral or permanent shallow wetlands near the coast or inland, including lagoons, lakes, swamps, riverbanks, waterholes, bore drains, dams, soaks and pools in saltflats. They sometimes use flooded paddocks or damp grasslands. They have occasionally been recorded on dry gibber plains, with little or no perennial vegetation (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap DBCA
Calidris tenuirostris	Great Knot	Cr	Ma, Mi, Cr	In Australasia, the species typically prefers sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbours, estuaries and lagoons. They are occasionally found on exposed reefs or rock platforms, shorelines with mangrove vegetation, ponds in saltworks, at swamps near the coast, saltlakes and non-tidal lagoons. The Great Knot rarely occurs on inland lakes and swamps (Higgins & Davies 1996). Typically, the Great Knot roosts in large groups in open areas, often at the waters edge or in shallow water close to feeding grounds (Higgins & Davies 1996; Rogers 2001). It is known that in hot conditions, waders prefer to roost where a damp substrate lowers the local temperature (Rogers 1999). A group of approximately 8610 birds have been recorded	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				roosting at an inland claypan near Roebuck Bay in north-west Western Australia (Collins et al. 2001).		
Charadrius leschenaultii	Greater Sand Plover	IA, Vu	Ma, Mi, Vu	In the non-breeding grounds in Australasia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons and inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs. They are occasionally recorded on near-coastal saltworks and saltlakes, including marginal saltmarsh, and on brackish swamps (Stewart et al. 2007).	Unlikely, no suitable habitat present	NatureMap DBCA
Charadrius mongolus	Lesser Sand Plover	IA, En	Ma, Mi, En	In non-breeding grounds in Australia, this species usually occurs in coastal littoral and estuarine environments. It inhabits large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. In north-western Australia, the species appears to use the Port Hedland saltworks in preference to nearby beaches. The species is seldom recorded away from the coast, at margins of lakes, soaks and swamps associated with artesian bores (Marchant & Higgins 1993).	Unlikely, no suitable habitat present	NatureMap DBCA
Erythrotriorchis radiatus	Red Goshawk	VU	VU	The Red Goshawk occurs in coastal and sub-coastal areas in wooded and forested lands of tropical and warm-temperate Australia (Marchant & Higgins 1993). Riverine forests are also used frequently. Such habitats typically support high bird numbers and biodiversity, especially medium to large species which the goshawk requires for prey. The Red Goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within one km of permanent water (DEE 2019).	Unlikely – uncommon in the Dampierland. Local occurrence would be as vagrant	PMST
Erythrura gouldiae	Gouldian Finch	P4	EN	The Gouldian Finch inhabits open woodlands that are dominated by Eucalyptus trees and support a ground cover of Sorghum and other grasses (Boekel 1980). The critical	Likely, known to occur locally, may forage on seed of	NatureMap DBCA PMST

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				components of suitable core habitat for the Gouldian Finch appear to be the presence of favoured annual and perennial grasses (especially Sorghum), a nearby source of surface water and, in the breeding season, unburnt hollow-bearing Eucalyptus trees (especially E. tintinnans, E. brevifolia and E. leucophloia) (Higgins et al. 2006).	grasses when seasonally suitable within the project area.	
Falco peregrinus	Peregrine falcon	OS		The Peregrine Falcon is seen occasionally anywhere in the south-west of WA. It is found everywhere from woodlands to open grasslands and coastal cliffs - though less frequently in desert regions. The species nests primarily on ledges of cliffs, shallow tree hollows, and ledges of building in cities. (Morcombe 2004).	Likely, the species is known to persist in the region, however use would be foraging only with no breeding habitat present, such as tall structures or steep topography.	DBCA
Fregata ariel	Lesser Frigatebird	IA	Ma, Mi	The Lesser Frigatebird is said to be the most common and widespread frigatebird in Australian seas (DAWE 2020). It is common in tropical seas, breeding on remote islands, including Christmas Island in the Indian Ocean in recent years. These birds are most likely to be seen from the mainland prior to the onset of a tropical cyclone, and once this abates they disappear again.	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA
Gelochelidon nilotica	Gull-billed Tern	IA	Ma, Mi	The Gull-billed Tern is nomadic or migratory species in Australia. Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands, where resources are favorable. They are only rarely found over the ocean. The Gull-billed Tern. Although essentially an inland species, outside breeding season it shows a distinct preference for saltmarshes and lagoons near the coast. Movements are not fully understood but it is common and widespread in Australia (Morcombe 2004).	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Hydroprogne caspia	Caspian Tern	IA	Ma, Mi	The Caspian Tern is mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs (DAWE 2020).	Unlikely, no suitable habitat present	NatureMap DBCA
Limosa lapponica (all sub-species)	Bar-tailed Godwit	IA, Vu or Cr	Ma, Mi, Vu or Cr	The Bar-tailed Godwit is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. It has been sighted in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. It is rarely found on inland wetlands or in areas of short grass, such as farmland, paddocks and airstrips, although it is commonly recorded in paddocks at some locations overseas (Marchant & Higgins 1993).	Unlikely, no suitable habitat present	NatureMap DBCA PMST
Limosa limosa	Black-tailed Godwit	IA	MI	In Australia the Black-tailed Godwit has a primarily coastal habitat environment. The species is commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand or shell-grit; occasionally recorded on rocky coasts or coral islets. The use of habitat often depends on the stage of the tide. It is also found in shallow and sparsely vegetated, near-coastal, wetlands; such as saltmarsh, saltflats, river pools, swamps, lagoons and floodplains. There are a few inland records, around shallow, freshwater and saline lakes, swamps, dams and bore-overflows. They also use	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				lagoons in sewage farms and saltworks (Higgins & Davies 1996).		
Numenius madagascariensis	Eastern Curlew	IA, Cr	Ma, Mi, Cr	The Eastern Curlew is a large non-breeding migratory shorebird, found commonly along the north coast of Western Australia, but rarely south of Shark Bay. The species is found along the coastline from Barrow Island and Dampier Archipelago, through the Kimberley in WA to the NT. It is found in estuaries, bays, harbours, inlets and coastal lagoons, saltworks and sewerage farms, areas (e.g. intertidal mudflats or sandflats fringed by mangroves) often with beds of seagrass and occasionally on ocean beaches, coral reefs, rock platforms and rocky islets. The Eastern Curlew forages on soft, sheltered, intertidal sand- or mudflats, often near mangroves, on saltflats, saltmarshes, rock pools, coastal reefs and ocean beaches near the tideline. The species roosts in large flocks, separate from other waders on sandy spits and islets, dry beach sand near the high-water mark, among coastal vegetation (including low saltmarsh and mangroves) and occasionally on reef-flats, in the shallow water of lagoons, near-coastal wetlands, in trees and posts (Morcombe 2004).	Unlikely, no suitable habitat present	NatureMap DBCA PMST
Numenius minutus	Little Curlew, Little Whimbrel	IA	Ma, Mi	When resting during the heat of day, the Little Curlew congregates around pools, river beds and water-filled tidal channels, and shallow water at edges of billabongs. The species prefers pools with bare dry mud (including mudbanks in shallow water) and they do not use pools if they are totally dry, flooded or heavily vegetated (Higgins & Davies 1996). Birds may also rest in grassy, open woodlands and on bare blacksoil plains, or on dry or recently burnt grasslands on floodplains, which may be without vegetation for hundreds of metres, and occasionally on mudflats when nearby grasslands are unburnt, or around swamps. Resting has also been recorded under	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				partly submerged vegetation. After freshwater pools dry up, roosting may occur in the shallows of reservoirs and the sea (Higgins & Davies 1996).		
Numenius phaeopus	Whimbrel	IA	Ma, Mi	The Whimbrel is often found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, unvegetated mudflats. It is occasionally found on sandy or rocky beaches, on coral or rocky islets, or on intertidal reefs and platforms. It has been infrequently recorded using saline or brackish lakes near coastal areas. It also used saltflats with saltmarsh, or saline grasslands with standing water left after high spring-tides, and in similar habitats in sewage farms and salt fields (Higgins & Davies 1996). There are a small number of inland records from saline lakes and canegrass swamps .It has also been recorded in coastal dunes and on a football field (Smith & Chafer 1987).	Unlikely, no suitable habitat present	NatureMap DBCA
Onychoprion anaethetus	Bridled tern			In Western Australia, breeding is widespread from islands off Cape Leeuwin (extending round the southern coast to Seal Rocks) north to Shark Bay and in Pilbara region and Kimberley Division. At sea, distribution extends from Cape Leeuwin north to Dirk Hartog Island, with isolated mainland coastal records at Point Maud and Ningaloo, and from Barrow Island to the Dampier Archipelago, and at sea off the Kimberley coast from waters west of the Dampier Peninsula to Ashmore Reef and Joseph Bonaparte Gulf. In the Northern Territory, most breeding colonies are in the eastern portion of the territory, with main colonies being off north-eastern Arnhem Land, and on south-eastern Groote Eylandt and the Sir Edward Pellew Group (DEE 2019).	Unlikely, no habitat present and the species utilises marine environments. Only occurs as vagrant on northern mainland shorelines	DBCA
Pandion cristatus	Osprey, Eastern Osprey	IA	Ma, Mi	Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but	Unlikely, no suitable habitat present, although	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				occasionally travel inland along major rivers, particularly in northern Australia. They require extensive areas of open fresh, brackish or saline water for foraging (Marchant & Higgins 1993). They frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes. They exhibit a preference for coastal cliffs and elevated islands in some parts of their range, but may also occur on low sandy, muddy or rocky shores and over coral cays.	opportunistic visitation may occur	
Pluvialis fulva	Pacific Golden Plover	IA	Ma, Mi	In non-breeding grounds in Australia this species usually inhabits coastal habitats, though it occasionally occurs around inland wetlands. Pacific Golden Plovers usually occur on beaches, mudflats and sandflats (sometimes in vegetation such as mangroves, low saltmarsh such as Sarcocornia, or beds of seagrass) in sheltered areas including harbours, estuaries and lagoons, and also in evaporation ponds in saltworks. The species is also sometimes recorded on islands, sand and coral cays and exposed reefs and rocks. They are less often recorded in terrestrial habitats, usually wetlands such as fresh, brackish or saline lakes, billabongs, pools, swamps and wet claypans, especially those with muddy margins and often with submerged vegetation or short emergent grass. Other terrestrial habitats inhabited include short (or, occasionally, long) grass in paddocks, crops or airstrips, or ploughed or recently burnt areas, and they are very occasionally recorded well away from water (Marchant & Higgins 1993).	Unlikely, no suitable habitat present	NatureMap DBCA
Pluvialis squatarola	Grey Plover	IA	Ma, Mi	In non-breeding grounds in Australia, Grey Plovers occur almost entirely in coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				muddy lagoons. They also occur around terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes. The species is also very occasionally recorded further inland, where they occur around wetlands or salt-lakes (Marchant & Higgins 1993).		
Papasula abbotti	Abbott's Booby		EN	Currently, Abbott's Booby is only known to breed on Christmas Island and to forage in the waters surrounding the island Within Christmas Island, most nests are found in the tall plateau forest on the central and western areas of the island, and in the upper terrace forest of the northern coast. The species was once thought to be restricted to areas above 150 m, mostly on the sides of north-west facing slopes but a survey in 1991 located them in some new areas Some of these areas had been known but were not recorded in a 1981 survey This revised distribution would be due partly to movement of the birds but the survey also discovered previously unknown nesting areas (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	PMST
Pezoporus occidentalis	Night Parrot		CR	The Night Parrot is a highly elusive nocturnal ground dwelling parrot found in the arid and semi-arid zones of Australia; it is one of only three ground-dwelling parrots in Australia. The Night Parrot was thought to be extinct but in 2013 it was rediscovered in Queensland (Pullen Pullen Reserve). Subsequently, the Night Parrot Recovery Team confirms that there is one population recently recorded in the Diamantina National Park/Pullen Pullen Reserve area in western Queensland, and other recent records in the Wiluna district of central WA, and the Lake Gregory area of northern WA .Purported records at Kalamurina in SA and Goneaway NP in Queensland have not been confirmed (DEE 2019).	Highly Unlikely, the species is not known from this region and limited available habitat	PMST

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Rostratula australis	Australian Painted Snipe	EN	EN	The Australian Painted Snipe is restricted to Australia with historical records from around the Perth region in Western Australia. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. The nest consists of a scrape in the ground, lined with grasses and leaves. Breeding is often in response to local conditions; generally occurs from September to December. Incubation and care of young is all undertaken by the male only. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter (DEE 2019).	Unlikely, no suitable habitat present	PMST
Sterna dougallii	Roseate Tern	IA	Ma, Mi	The Roseate Tern occurs in coastal and marine areas in subtropical and tropical seas. The species inhabits rocky and sandy beaches, coral reefs, sand cays and offshore islands. Birds rarely occur in inshore waters or near the mainland, usually venturing into these areas only accidentally, when nesting islands are nearby. In WA, the subspecies is regularly recorded north from Mandurah to around Eighty Mile Beach. Around the Kimberley coastline, the subspecies occurs at scattered sites, north to the Bonaparte Archipelago and possibly further. The subspecies used to be a sporadic visitor to the southwest, but occurs regularly at present. In addition, breeding colonies have been established on Lancelin Island and Second Rock (DAWE 2020).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA
Sterna hirundo (all sub-species)	Common Tern	IA	MI	In northern Australia there are scattered records in the Kimberley Division of Western Australia, but the species has recently been found to be one of the most abundant species recorded in ground surveys of waterbirds of the Top End of the Northern Territory. In Australia, they are recorded in all marine zones, but are commonly observed	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				in near-coastal waters, both on ocean beaches, platforms and headlands and in sheltered waters, such as bays, harbours and estuaries with muddy, sandy or rocky shores (DEE 2019).		
Sternula albifrons	Little Tern	IA	MI	In Australia, Little Terns inhabit sheltered coastal environments, including lagoons, estuaries, river mouths and deltas, lakes, bays, harbours and inlets, especially those with exposed sandbanks or sand-spits, and also on exposed ocean beaches (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap
Sula leucogaster	Brown Booby	IA	MI	In Australia, the Brown Booby is found from Bedout Island in Western Australia, around the coast of the Northern Territory to the Bunker Group of islands in Queensland with occasional reports further south in New South Wales and Victoria. The species is reported further south to Tweed Heads, NSW, and to near Onslow, Western Australia and may be becoming more common in these areas. The Brown Booby uses both marine and terrestrial habitat. The species occurs in, but is not restricted to, tropical waters of all major oceans, often staying close to breeding islands (DEE 2019).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA
Thalasseus bergii	Crested Tern	IA	MI	Crested Terns occur singularly or in flocks in coastal areas, estuaries, inlets, islands and occasionally on large inland lakes or rivers. They are often seen perching with gulls on beaches, sand spits or jetties. Crested Terns are widespread from the south coast of Africa north to Asia, south to Australia and east to Polynesia. They also occur on many islands in the Indian and Pacific Oceans (DEE 2018).	Highly Unlikely, no habitat present and the species utilises marine environments	NatureMap DBCA
Tringa brevipes	Grey-tailed Tattler	P4, IA	MI	Within Australia, the Grey-tailed Tattler has a primarily northern coastal distribution and is found in most coastal regions (Higgins & Davies 1996). The Grey-tailed Tattler is often found on sheltered coasts with reefs and rock platforms or with intertidal mudflats. It can also be found at	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				intertidal rocky, coral or stony reefs as well as platforms and islets that are exposed at low tide (DEE 2018).		
Tringa glareola	Wood sandpiper	IA	MI	The Wood Sandpiper uses well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes. Wood Sandpipers are more numerous in the north than the south of Australia and are also found in New Guinea, Africa, the Indian subcontinent and South-east Asia. They breed widely across the north of Europe and Asia, mostly in Scandinavia, Baltic countries and Russia. They are the most abundant migratory wader in non-coastal areas of Asia (DEE 2019).	Unlikely, no suitable habitat present	DBCA
Tringa nebularia	Common Greenshank, greenshank	IA	MA, Mi	The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. The edges of the wetlands used are generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap DBCA
Tringa totanus	Common Redshank, redshank	IA	Ma, Mi	The Common Redshank is found at sheltered coastal wetlands such as bays, river estuaries, lagoons, inlets and saltmarsh (with bare open flats and banks of mud or sand). They are also found around saltlakes, freshwater lagoons, artificial wetlands and saltworks and sewage farms (Higgins	Unlikely, no suitable habitat present	NatureMap DBCA

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				& Davies 1996). The Common Redshank has been observed feeding in shallow water, on wet bare mud or sand, or on algal deposits, round the edges of wetlands, near rocks or samphire (Higgins & Davies 1996). They have been recorded roosting on small elevated areas such as estuarine sandbars and muddy islets surrounded by water (Higgins & Davies 1996).		
Tringa stagnatilis	Marsh Sandpiper, little greenshank	IA	Ma, Mi	The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes. In north Australia they prefer intertidal mudflats (Higgins & Davies 1996), although surveys in Kakadu National Park recorded more birds around shallow .At the Top End they often use ephemeral pools on inundated freshwater and tidal floodplains (Higgins & Davies 1996).	Unlikely, no suitable habitat present	NatureMap
Tyto novaehollandiae kimberli	Masked Owl	P1	VU	The range of the Masked Owl is a broad coastal band around most of mainland Australia and throughout Tasmania, and for the most part is less than 300 km from the coast. Population numbers are low on the mainland and several states give this species special conservation status. The Masked Owl inhabits heavy forests, and will hunt over open woodlands, timbered waterways and open country on the fringe of these areas. The main requirements are tall trees with suitable hollows for nesting and roosting and adjacent areas for foraging. Masked Owls are territorial, and pairs remain in or near the territory all year round (Birdlife Australia 2019)	Highly Unlikely, this species is not known from this region. All known records are from central and Northern Kimberley.	PMST

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
Xenus cinereus	Terek Sandpiper	IA	MA, Mi	The Terek Sandpiper mostly forages in the open, on soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons. The species has also been recorded on islets, mudbanks, sandbanks and spits, and near mangroves and occasionally in samphire (Halosarcia spp.). Birds are seldom near the edge of water, however, birds may wade into the water (Marchant & Higgins 1993). Occasionally, on sandy beaches, among seaweed and other debris and in rocky areas, Terek Sandpipers will use the supralittoral or upper littoral zone, where a film of water covers the sand. However, on exposed rock platforms, the species forages in the lower littoral zone and not the supralittoral or upper littoral zones (Marchant & Higgins 1993).	Unlikely, no suitable habitat present	NatureMap DBCA
Mammals						
Macrotis lagotis	Bilby, Dalgyte, Ninu	VU	VU	In Western Australia the species is restricted to the north, including the Pilbara, Sandy and Gibson Deserts. The Greater Bilby usually spends the daytime in burrows, often built against termite mounds, spinifex hummock or shrubs (Van Dyck and Strahan 2008). Extant population occur in a variety of habitats, usually on landforms with level to low slope topography and light to medium soils. It occupies three major vegetation types; open tussock grassland on uplands and hills, mulga woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas. Laterite and rock feature substrates are an important part of the species' habitat. These habitat support shrub species, such as Acacia kempeana, A. hilliana and A. rhodophloia, which have root-dwelling larvae that provide a constant food source. The current occurrence of this species is strongly associated with higher rainfall and temperatures, which promote areas of higher plant and food production (DEE 2019).	Likely, the species is known to occur locally based on previous records. No evidence of activity was recorded within the project area, however based on close proximity of records, habitat characteristics, this species is likely forage or move through the project area, and the project area habitat is potential	NatureMap DBCA PMST

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
					burrowing habitat. Being close to the community may impact on the species numbers and distribution.	
Mormopterus cobourgianus	North-western free-tailed bat			It prefers to forage in the tropical savannas of Northern Australia. It is also found in urban areas, using artificial lights to forage for the insects attracted to them. They will fly and forage in groups of two or more individuals. Its foraging style utilizes fast, direct flight suited for open areas or above canopies. It is insectivorous, consuming beetles, bugs, moths, lacewings, grasshoppers, cockroaches, flies and leafhoppers It is one of the only species of bat in Australia that can be heard when foraging. Its echolocation frequency is relatively low (15-25kHz), overlapping with the upper range of sounds audible to humans. It is nocturnal, roosting in sheltered places during the day such as tree hollows or caves. These roosts can consist of many individuals, as it is a colonial species (Kutt et al 2008).	Highly Unlikely, this species requires mangrove hollows to shelter. No habitat present	DBCA
Macroderma gigas	Ghost bat	Vu	Vu	The Ghost Bat occurs in a wide range of habitats, and requires an undisturbed cave, deep fissure or disused mine shaft in which to roost. It is patchily distributed across Australia, and is sensitive to disturbance (Van Dyck and Strahan 2008).	Highly Unlikely, this species is not known from the area. No habitat present	PMST
Saccolaimus saccolaimus nudicluniatus	Bare-rumped Sheath-tailed Bat,	P3	VU	The Bare-rumped Sheathtail Bat occurs mostly in lowland areas, typically in a range of woodland, forest and open environments (DotE 2016). The Bare-rumped Sheathtail Bat has been suggested to forage over habitat edges such as the edge of rainforest and in forest clearings (Churchill 1998). There is no information is available on foraging habitat shifts between the dry and wet seasons. The small number of confirmed roosts located in Australia have all	Highly Unlikely, this species is not known from the area. The species is only known from further north in the Kimberley.	PMST

Taxa	Common Name	Status		Description and habitat requirements	Likelihood of occurrence within the project area	Source
		BC Act / DBCA	EPBC Act			
				been in tree hollows. Overseas other subspecies (perhaps distinct species to the form(s) occurring in Australia) commonly roost in caves, overhangs and man-made structures. However, in Australia no individuals have been found roosting in caves. For example, a survey conducted of about 1000 coastal caves in the Wet Tropics region failed to locate this species (DotE 2016). In 2011, morphological analyses of four S. flaviventris specimens held at the Western Australian Museum indicated that they had been misidentified and are likely to belong to the species S. saccolaimus (Milne pers. comm., 2013). The bare-rumped sheath-tail bat is therefore likely to be distributed through the Kimberley region of Western Australia as far west as Broome, however this has not been confirmed through genetic analyses (Milne pers. comm., 2013).		
Reptiles						
Simoselaps minimus	Dampierland burrowing snake	P2		This small fossorial snake is known only from Dampier Land, in the south-west Kimberley, WA. Known to occur in coastal dunes and sandy junction between dunes and adjacent *Acacia* shrublands. Occasional records occur from near-coastal Pindan. Poorly known but presumed to be similar to other *Simoselaps*; a sand-swimmer feeding largely or wholly on skinks of the genus *Lerista* (Wilson and Swan 2017).	Likely. Potentially suitable habitat (near-coastal Pindan shrubland on sandy soil) occurs within the project area.	NatureMap DBCA
Lerista separanda	Dampierland plain slider, skink	P2		Dampier Land, west Kimberley	Likely. Potentially suitable habitat (near-coastal Pindan shrubland on sandy soil) occurs within the project area.	NatureMap DBCA

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Fauna detected during field survey

Family	Genus	Species	Common name	Status		Ardyaloon HP	Djarindjin HP	Beagle Bay HP	Bidyadanga HP
				BC Act/ DBCA	EPBC Act				
BIRDS									
Accipitridae	*Accipiter*	*cirrocephalus*	Collared Sparrowhawk					X	
	Haliastur	*sphenurus*	Whistling Kite			X			X
Artamidae	*Artamus*	*cinereus*	Black-faced Woodswallow			X			
	Artamus	*leucorynchus leucopygialis*	White-breasted Woodswallow			X			
Cacatuidae	*Cacatua*	*sanguinea sanguinea*	Little Corella			X			X
Campephagidae	*Coracina*	*novaehollandiae*	Black-faced Cuckoo-Shrike			X	X	X	X
Columbidae	*Geopelia*	*humeralis*	Bar-shouldered Dove			X	X	X	X
	Ocyphaps	*lophotes*	Crested Pigeon						X
	Geopelia	*striata*	Peaceful Dove			X	X	X	X
Corvidae	*Corvus*	*orru*	Torresian Crow					X	X
Cuculidae	*Centropus*	*phasianinus phasianinus*	Pheasant Coucal			X	X		
Estrildidae	*Poephila*	*acuticauda*	Long-tailed Finch			X		X	

Family	Genus	Species	Common name	Status		Ardyaloon HP	Djarindjin HP	Beagle Bay HP	Bidyadanga HP
				BC Act/ DBCA	EPBC Act				
Falconidae	*Falco*	*berigora berigora*	Brown Falcon						X
Halcyonidae	*Dacelo*	*leachii leachii*	Blue-winged Kookaburra				X	X	X
	Todiramphus	*sanctus*	Sacred Kingfisher				X	X	X
Maluridae	*Malurus*	*melanocephalus cruentatus*	Red-backed Fairy-wren				X		
	Malurus	*lamberti*	Variegated Fairy-wren			X	X	X	X
Meliphagidae	*Cissomela*	*pectoralis*	Banded Honeyeater			X			
	Lichmera	*indistincta indistincta*	Brown Honeyeater			X	X	X	X
	Philemon	*citreogularis citreogularis*	Little Friarbird			X	X	X	X
	Lichenostomus	*unicolor*	White-gaped Honeyeater			X	X		
	Ptilotula	*flavescens*	Yellow-tinted Honeyeater			X			
Meropidae	*Merops*	*ornatus*	Rainbow Bee-eater				X	X	X
Monarchidae	*Grallina*	*cyanoleuca*	Magpie-lark			X	X		X
Otididae	*Ardeotis*	*australis*	Australian Bustard						X

Family	Genus	Species	Common name	Status		Ardyaloon HP	Djarindjin HP	Beagle Bay HP	Bidyadanga HP
				BC Act/ DBCA	EPBC Act				
Pachycephalidae	*Pachycephala*	*rufiventris*	Rufous Whistler			X		X	
Pardalotidae	*Pardalotus*	*rubricatus*	Red-browed Pardalote						X
Pomatostomidae	*Pomatostomus*	*temporalis*	Grey-crowned Babbler			X	X	X	
Psittacidae	*Melopsittacus*	*undulatus*	Budgerigar						X
	Trichoglossus	*haematodus rubritorquis*	Rainbow Lorikeet			X		X	
	Aprosmictus	*erythropterus coccineopterus*	Red-winged Parrot			X	X	X	X
Ptilonorhynchidae	*Ptilonorhynchus*	*nuchalis nuchalis*	Great Bowerbird				X		
Rhipiduridae	*Rhipidura*	*leucophrys*	Willie Wagtail			X	X	X	X
MAMMALS									
Bovidae	*Bos*	*taurus*	Cow	int			X		X
Canidae	*Canis*	*domesticus*	Dogs	int		X	X		X
	Equus	*asinus*	Donkey			X	X	X	X
Felidae	*Felis*	*catus*	Feral Cat	int			X		X
Macropodidae	*Macropus*	*agilis*	Agile Wallaby			X	X		
REPTILES									

Family	Genus	Species	Common name	Status		Ardyaloon HP	Djarindjin HP	Beagle Bay HP	Bidyadanga HP
				BC Act/ DBCA	EPBC Act				
Agamidae	*Laphognathus*	*gilberti*	Gilbert's Water Dragon						X
	Gowidon	*longirostris*	Long-snouted Water Dragon					X	
Scincidae	*Lerista*	*apoda*	Dampierlands Limbless Slider			X			
	Lerista	*griffini*	Griffin's Burrowing skink			X	X		
	Ctenotus	*pantherinus*	Panthers Skink						X
	Ctenotus	*inornatus*	Plain Ctenotus				X		
	Carlia	*munda*	Striped Rainbow Skink			X			X
Varanidae	*Varanus*	*tristis tristis*	Black-tailed Monitor				X		
	Varanus	*acanthurus*	Ridge-tailed Monitor					X	

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